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Nationally appropriate mitigation actions by developing country Parties
Work programme to further the understanding of the diversity of nationally appropriate mitigation actions

Compilation of information on nationally appropriate mitigation actions to be implemented by developing country Parties

Revised note by the secretariat

Summary

This document presents a compilation of the information on all nationally appropriate mitigation actions (NAMAs) communicated by developing country Parties to date. The compilation comprises the NAMAs contained in documents FCCC/AWGLCA/2011/INF.1 and FCCC/AWGLCA/2012/MISC.2 and Add.1 and those communicated by developing country Parties but not previously included in an official UNFCCC document.

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I. Introduction

A. Mandate

1. The Conference of the Parties (COP), at its eighteenth session, requested the secretariat to prepare an information note for the subsidiary bodies that compiles the information contained in documents FCCC/AWGLCA/2011/INF.1 and FCCC/AWGLCA/2012/MISC.2 and Add.1 and to update it with new information as communicated by Parties.[1]

B. Scope

2. This document presents the information communicated by developing country Parties on the nationally appropriate mitigation actions (NAMAs) that they intend to implement. At the time of publishing, a total of 58 Parties and a group of Parties had communicated information on such NAMAs to the secretariat.

3. The information on NAMAs communicated by developing country Parties in response to a Notification to Parties dated 18 January 2010[2] includes related context, conditions and considerations associated with the NAMAs, including with regard to the support required for their preparation and implementation. Subsequently, some developing country Parties communicated information on NAMAs in response to an invitation made by the COP at its seventeenth session,[3] including on underlying assumptions and methodologies, sectors and gases covered, global warming potential values used and estimated mitigation outcomes.

C. Background and approach

4. This document comprises the following:

(a) The information contained in document FCCC/AWGLCA/2011/INF.1, which has been reproduced without any changes;

(b) The submissions included in document FCCC/AWGLCA/2012/MISC.2 and Add.1, which have been compiled using the approach followed with the submissions contained in document FCCC/AWGLCA/2011/INF.1;

(c) The information on NAMAs communicated by Burkina Faso, Dominica, Cook Islands, Kyrgyzstan, Gambia, Guinea and Thailand, which has not previously been included in an official UNFCCC document. These submissions have been compiled in this document following the same approach as for the above-listed submissions.

5. For information on NAMAs communicated by Parties in languages other than English, and where a translation was not provided by the respective Party, the secretariat

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[1] Decision 1/CP.18, paragraph 17. In accordance with this decision, Parties' communications to the secretariat that are included in this information document are considered communications under the Convention.

[2] See <http://unfccc.int/home/5262.php>.

[3] Decision 2/CP.17, paragraph 34.

has undertaken an informal translation. These translations are provided for the purpose of information only and are without prejudice to the original communication.[4]

6. This document will be updated to include any new and/or additional information on NAMAs communicated to the secretariat by developing country Parties. A revised version will be issued for the consideration of the subsidiary bodies at future sessions, as appropriate.

II. Information communicated by developing country Parties

Afghanistan

7. Afghanistan communicated that its NAMAs would include the preparation of its initial national communication, including its national greenhouse gas (GHG) inventory. The Party added that specific mitigation strategies and activities appropriate to the national context would also form part of the initial national communication.

8. Afghanistan also called for further technical collaboration and negotiation between Parties in the lead-up to COP 16, which it hoped would establish an effective, functional, comprehensive and equitable climate change regime beyond 2012, in line with the ultimate objective of the Convention.

African Group

9. The African Group emphasized the central role that agriculture plays in the economic and social development of its people. It was mentioned that the priorities for Africa and its communities are to: ensure food security; eradicate poverty and enhance socioeconomic development; and ensure environmental and livelihood sustainability by adapting to the effects of climate change and identifying the potential co-benefits of mitigation.

10. The information communicated by the African Group included a list of NAMAs, as outlined below, with a deadline for implementation of 2020.

11. Firstly, information was communicated on NAMAs in the following investment areas:

(a) Changes in agricultural systems, including in agroforestry; protected cultivation; hydroponics; aquaponics; mixed farming; integrated farming; precision agriculture; and organic farming;

(b) Changes in agricultural practices, including changing planting dates; changing varieties/breeds; adopting sustainable land management techniques and approaches; supplementary livestock feeds; integrated pest management; crop rotation; production of healthy seeds and planting material; post-harvest handling and storage; and soil health and fertility management;

(c) Changes in agricultural water management, including water harvesting; reuse and recycling; on-farm irrigation, where appropriate; soil and water conservation; and watershed management;

(d) Agricultural diversification, including promoting improved crop varieties, livestock breeds and fish fingerlings; increasing the value of sustainable agricultural practices through the valuation of carbon; and broadening the agricultural production base through, for example, promoting small livestock;

[4] The original communications are available at <http://unfccc.int/home/items/5265.php>, <http://unfccc.int/home/items/5276.php> and <http://unfccc.int/focus/mitigation/items/7172.php>.

(e) Risk management and insurance, including livestock and crop insurance and weather-based index insurance;

(f) Agricultural research and technology development, including participatory crop and livestock breeding; pest-, disease- and drought- and/or heat-tolerant crops; research into aquaculture and other new farming systems; research into crop, livestock, soil, water and pest/disease/weed control; and research as applied to area-specific varieties and practices;

(g) Agricultural advisory service and information systems, including strong extension services; a participatory extension approach, including farmer-to-farmer training and farmer field schools; dissemination of climate-resilient varieties of crops, technologies and practices; dissemination of seasonal climate forecasts; market and climate information systems; and information and communications technologies (ICT);

(h) Agricultural market development, including cooperatives for farm inputs and outputs; cooperative storage; infrastructure and market development; support for market information systems, including the use of ICT (mobile phones and digital pen technology); and promoting agroprocessing and value-addition and post-harvest technologies;

(i) Social protection and disaster risk management, including strengthening local and farmers' institutions and organizations; promoting microfinance schemes, including ensuring functioning financial markets and institutions; increasing the focus on risk sharing and risk reduction across the entire value chain; developing/enhancing climate information systems and early warning mechanisms; and developing/enhancing disaster risk management.

12. Secondly, information was communicated on NAMAs in the following areas of governance:

(a) Reviewing existing detrimental policies and regulations that exacerbate climate change impacts;

(b) Mainstreaming win-win adaptation and mitigation strategies and actions through appropriate incentives, including through existing national and regional frameworks and national agricultural development plans;

(c) Developing policies to ameliorate the adverse impacts of livestock production and pastoralism;

(d) Investigating financial risk management;

(e) Strengthening existing agricultural institutions and establishing new ones.

13. Thirdly, information was communicated on NAMAs relating to early action readiness to scale up best practices:

(a) National/sectoral strategy and action plans that enhance agricultural adaptation and the potential for mitigation;

(b) Increased adaptation of crops, livestock and aquacultured organisms to climate stress;

(c) Enhanced access to and utilization of technologies that enhance efficiency and productivity;

(d) Increased use of resource-conserving technologies in agronomic practices, nutrient management, water management, conservation agriculture and residue management, agroforestry, restoration and rehabilitation, livestock management, fisheries and aquaculture, and efficient energy management;

(e) Access to credit and microfinance;

(f) Improved risk sharing, including crop and livestock insurance and weather-based index insurance;

(g) Agricultural advisory services and information systems, including the use of mobile telephony and digital pen technology;

(h) Developing a national system for measurable, reportable and verifiable carbon accounting.

14. Regarding the tracking of implementation and the assessment of impact, it was communicated that actions would include the establishment of a specialized national institution responsible for measurement, reporting and verification (MRV), and the development of a national MRV system to: document greenhouse gas (GHG) emissions from agriculture; quantify emission levels under different practices; specify methodologies for the quantification of emissions; and develop tools to monitor the impacts of adaptation interventions.

15. Regarding international support, the African Group specified the need for:

(a) Technology development and transfer to support the identification, review and implementation of technological needs and to provide opportunities for technology deployment and the enhancement of technology research and development in key areas in the agriculture sector;

(b) Capacity-building for: the development, implementation and monitoring of agricultural NAMAs; the use of tools to enable accurate and full GHG accounting; the optimum use by farmers and other agricultural stakeholders of available resources and technologies; agricultural research and development in the region;

(c) Finance, stating that development partners, multilateral and other organizations, and Parties included in Annex II to the Convention should provide financial support, including for capacity-building, research and technology development and transfer, to African countries to help them to undertake and implement adaptation and mitigation actions in agriculture, in line with Article 4, paragraphs 1(c), 4 and 5, of the Convention.

Algeria

16. Algeria communicated that it has developed renewable energy management and development programmes that will enable a reduction of emissions relative to the 'business as usual' scenario.

17. The communication also stated that Algeria has already undertaken several actions to reduce emissions, such as a reduction in the flaring of gas associated with oil production, the promotion of the use of low-carbon fossil fuels and the capture and geological sequestration of carbon dioxide (CO_2).

18. Algeria also stated that the Copenhagen Accord constitutes a policy statement that can pave the way for negotiations towards a legally binding instrument that sets forth the concerns of all Parties on the basis of the fundamental principles of the Accord, in particular the principle of common but differentiated responsibility and fairness. Algeria also added that the emission reductions of Parties included in Annex I to the Convention (Annex I Parties) must be significant, given their historical responsibility, and that the Annex I Parties that are Parties to the Kyoto Protocol should be part of the second commitment period of the Kyoto Protocol. Further, the Party stated that the efforts to achieve the worldwide goal of reducing GHG emissions should be equitably borne by allowing developing countries access to atmospheric space for their social and economic development.

19. Algeria stated that NAMAs should be voluntary in nature and included in national communications. With respect to funding, Algeria stated that the Accord provides for developed country Parties to support the actions of developing countries in fighting climate change, which implies individualized commitments from developed countries, as well as the fair representation of developing countries in the international governance system for managing the funds.

Antigua and Barbuda

20. Antigua and Barbuda communicated that it would voluntarily undertake nationally appropriate, measurable and verifiable actions aimed at further reducing its already minuscule GHG emissions by 25 per cent below 1990 levels by 2020. The intention to pursue a low-carbon, green-growth development strategy during the period 2010–2015 was also stated.

21. Antigua and Barbuda recalled the relevant provisions of decisions 1/CP.15 and 1/CMP.5, which, inter alia, call for a two-track negotiating process and distinct outcomes under the Convention and its Kyoto Protocol. The Party stated that it is against this background that the Government of Antigua and Barbuda decided to communicate the information on its envisaged emissions reduction mentioned above.

22. The communication also included a request for the provision of support through the 'fast-track financing' scheme envisaged under paragraph 8 of the Copenhagen Accord to implement the above-mentioned low-carbon, green-growth development strategy. In addition, the Party stated that the country's NAMAs would be undertaken on the basis of the financial and technical support provided by the international community, including through that envisaged in paragraphs 8, 10 and 11 of the Copenhagen Accord.

23. Antigua and Barbuda also communicated that, consistent with Article 12, paragraph 1(b), of the Convention, it would communicate information on the above-mentioned mitigation actions and its low-carbon, green-growth development strategy through its national communications.

Argentina

24. Argentina communicated that it is currently developing programmes and NAMAs, supported by a strong regulatory framework in the sectors of, inter alia, energy efficiency, renewable energy, biofuels, forest management and solid waste management, which are expected to have a direct and positive effect on the reduction of GHG emissions, thereby contributing to the ultimate objective of the Convention. Additional information on the Party's sector-specific actions is provided below:

(a) Energy efficiency: Decree No. 140/07 created the National Programme for the Rational Use of Energy and Energy Efficiency, which incentivizes the rational use of electricity and natural gas through economic incentives for reducing consumption; Law No. 26473 forbids, since 31 December 2010, the commercialization of incandescent light bulbs in the country; and various national programmes have also been established, such as the Programme for Increasing Energy and Production Efficiency in Small- and Medium-sized Enterprises, the Programme for the Quality of Electric Appliances, and the Programme for Energy Saving and Energy Efficiency in Public Buildings;

(b) Renewable energy: Law No. 26190 offers subsidies for electricity generation from renewable energy resources such as wind, solar photovoltaic (PV), mini-hydro, biogas and biomass, establishing tax exemptions to incentivize investment in the sector. Under this framework, the state-owned company ENARSA (Energía Argentina S.A.) is developing wind projects with a total capacity of 500 MW, as well as the Programme for Renewable Energy for the Rural Market and Law No. 26123 for the Promotion of Hydrogen;

(c) Biofuels: the National Programme on Biofuels and Law No. 26093, which since January 2010 establishes a minimum share of 5 per cent of bioethanol and biodiesel in the gasoline and diesel oil sold in the country, provide a tax exemption and incremental prices for biofuel producers;

(d) Forest management: Law No. 26331 establishes rules for the use of land and for the rational and sustainable management of native forest and provides financial support to the provinces to compensate for potential short-term losses; Law No. 26432 promotes investment in new forest enterprises and the enlargement of existing forests;

(e) Solid waste management: the National Plan for the Integral Management of Urban Solid Waste is supported by a loan from the World Bank for the construction of sanitary landfills and landfill gas capture.

25. Argentina stated that COP 16/CMP 6 (the sixth session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol) would be the next opportunity to achieve efficient and effective actions so that, in the process of transformation towards a low-carbon society, developing countries could be provided with the financial, technological and scientific means to strengthen their sustainable development processes. This, the communication continued, is the fundamental basis, in conjunction with legally binding commitments for emission reductions by developed countries, from which to advance the process at the required accelerated pace.

26. Argentina also stated that the implementation of NAMAs by developing countries will contribute to the global process of the reduction of emissions, based on the principles of common but differentiated responsibilities and according to the principles and provisions of the Convention, particularly Article 4, paragraphs 1, 7 and 8.

Armenia

27. Armenia communicated the following NAMAs:

(a) The implementation of the National Programme on Energy Saving and Renewable Energy of the Republic of Armenia (2007), which aims to:

(i) Increase energy production from renewable sources;

(ii) Modernize thermal power plants;

(iii) Improve energy efficiency in all sectors of the economy;

(iv) Improve energy efficiency in buildings and construction;

(v) Decrease the loss of methane (CH_4) during gas transportation and from gas delivery systems;

(b) In the transport sector, expand the use of electrical transport and increase the share of natural gas in fuel used for motorized transport;

(c) Decrease CH_4 emissions from solid municipal waste and wastewater;

(d) Restore degraded forests, reduce deforestation, sustain soil CO_2 content and ensure its increase, and promote afforestation.

28. Armenia stated that its communication is made under the explicit understanding that the preamble of the Copenhagen Accord contains a reference to decision 1/CP.15, on the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA), and decision 1/CMP.5, on the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP), which requests the continuance of the two-track negotiating process.

Benin

29. Benin communicated the following NAMAs:

(a) The development of an urban transport system in Cotonou and greater Cotonou to reduce GHG emissions;

(b) The sustainable development of natural forests and the development of forest planting to strengthen carbon sinks;

(c) The recovery of CH_4 emitted by landfills in local communities with a special status (Cotonou and greater Cotonou, Porto-Novo and Parakou).

Bhutan

30. Bhutan communicated that, with regard to NAMAs, it already sequesters more carbon than it emits, and that the country has declared its intention to ensure that its emissions do not exceed its sequestration capacity.

31. Bhutan stated that it makes this commitment despite its status as a very vulnerable, small, landlocked least developed country (LDC) with a fragile mountainous ecosystem and numerous pressing social and economic development needs and priorities. The Party further stated that it makes this commitment because it believes that there is no greater need than the need to keep the planet safe in order to sustain life and that all Parties, large or small, can play a part in keeping the global temperature rise below 1.5 °C. While making this sincere commitment, Bhutan calls upon the global community to come forward and work towards a legally binding treaty under the guiding principles and commitments of the Convention.

32. Bhutan also communicated that, in its efforts to remain carbon-neutral and to adapt to the adverse effects of climate change, it will require the support of the international community, the details of which it will communicate at a later date.

Botswana

33. Botswana communicated that its mitigation actions will be relative to a baseline and that the baseline will be determined through capacity-building activities. The Party's NAMAs will therefore be relative reductions, or deviations, from the baseline. Botswana stated that a long-term mitigation and adaptation strategy needs to be developed to assess the country's mitigation potential in order to inform policy and specific actions to address climate change.

34. Botswana communicated that its mitigation actions will include reducing emissions from the use of petrol in the transport sector and the burning of coal and from reducing deforestation and planting forests to capture CO_2. Under the national emission reduction portfolio, projects and programmes will include a shift from coal to gas; nuclear energy; renewable energy; biomass; and carbon dioxide capture and storage (CCS). With regard to energy conservation and efficiency, national projects and programmes will target mass transport systems, buildings and low-energy appliances. The Party's NAMAs will also include sustainable development policies and measures such as:

(a) Energy efficiency programmes;

(b) Policies in the transport sector;

(c) Standards in the building sector;

(d) Minimum energy performance standards for household appliances.

35. Botswana also stated that it has a number of strategic plans and programmes aimed at reducing GHG emissions and that its mitigation actions will be either unilateral and/or

voluntary and that, in some instances, those actions may include proposed mitigation actions submitted through the Copenhagen Green Climate Fund.

36. Botswana stated that developing countries' NAMAs are voluntary and not legally binding, and that their implementation is conditional on technological, financial and capacity-building support in a measurable, reportable and verifiable manner, in line with paragraph 1(b)(ii) of the Bali Action Plan (decision 1/CP.13).

37. Botswana also stated that it is a developing country with significant development challenges relating to poverty, unemployment and high vulnerability to climate change impacts; nevertheless, it will play its part in line with the provisions of the Convention and take action in ways that are appropriate to the national circumstances. The Party added that it is and will continue to be a carbon-intensive, mainly coal-based, economy.

38. Botswana stated that it will report on its mitigation actions through national communications, consistent with Article 12, paragraph 1(b), of the Convention every two years and on the basis of the guidelines to be adopted by the COP. The Party also mentioned that it will develop domestic measurement, reporting and verification approaches, the results of which will be reported through its national communications, and that the supported NAMAs will be subject to international measurement, reporting and verification in accordance with the guidelines adopted by the COP.

Brazil

39. Brazil communicated that it anticipates its mitigation actions, listed below, to lead to an expected emissions reduction of between 36.1 per cent and 38.9 per cent below its projected emissions in 2020:

(a) A reduction in deforestation in the Amazon (range of estimated reduction: 564 Mt carbon dioxide equivalent (CO_2 eq) in 2020);

(b) A reduction in 'cerrado' deforestation (range of estimated reduction: 104 Mt CO_2 eq in 2020);

(c) A restoration of grazing land (range of estimated reduction: 83 to 104 Mt CO_2 eq in 2020);

(d) An integrated crop–livestock system (range of estimated reduction: 18 to 22 Mt CO_2 eq in 2020);

(e) No-till farming (range of estimated reduction: 16 to 20 Mt CO_2 eq in 2020);

(f) Biological nitrogen fixation (range of estimated reduction: 16 to 20 Mt CO_2 eq in 2020);

(g) Energy efficiency (range of estimated reduction: 12 to 15 Mt CO_2 eq in 2020);

(h) An increase in the use of biofuels (range of estimated reduction: 48 to 60 Mt CO_2 eq in 2020);

(i) An increase in energy supply from hydroelectric power plants (range of estimated reduction: 79 to 99 Mt CO_2 eq in 2020);

(j) Alternative energy sources (range of estimated reduction: 26 to 33 Mt CO_2 eq in 2020);

(k) Iron and steel – replacing coal from deforestation with coal from planted forests (range of estimated reduction: 8 to 10 Mt CO_2 eq in 2020).

40. Brazil stated that the envisaged domestic actions as indicated above are voluntary in nature and that they will be implemented in accordance with the principles and provisions of the Convention, particularly Article 4, paragraphs 1 and 7, Article 10, paragraph 2(a),

and Article 12, paragraphs 1(b) and 4. It also stated that the use of the clean development mechanism (CDM) established under the Kyoto Protocol would not be excluded.

41. Brazil also stated that it understands the Copenhagen Accord to be an important step in facilitating the conclusion of the on-going two-track negotiations under the AWG-KP and the AWG-LCA with a view to adopting a decision on the second commitment period of the Kyoto Protocol and also on the fulfilment of the Bali Action Plan during COP 16/CMP 6.

Burkina Faso

42. Burkina Faso communicated proposals[5] for a framework for the development of two NAMAs: one in the rural development sector and one in the energy sector.

43. The first proposal relates to the National Rural Sector Programme, with a 2015 horizon. It takes into account and operationalizes all policies and strategies linked to rural development. It was communicated that the mitigation potential of the programme is estimated to be 9.1 Mt CO_2 eq. or 1.2 Mt CO_2 eq/year between 2008 and 2015.

44. It was mentioned that the actions to be implemented under the programme are expected to contribute to the Government's objectives of: restoring 30,000 ha/year degraded forests; increasing plantations from 68,000 to 100,000 ha/year; increasing the area of natural forests from 170,000 to 500,000 ha; reducing the area of forests burned by wildfires from 30 to 20 per cent; and training local villagers on the sustainable management of natural resources.

45. The programme consists of three main actions, the first of which relates to reforestation and forest management and has a time frame for implementation of five years. The first project involves:

(a) Mapping the potential for creating forest/reforestation/managing existing forests;

(b) Raising the awareness of the main stakeholders and building their technical capacity for creating forest/reforestation/managing forests;

(c) Providing institutional support for creating forest/reforestation/managing forests and disseminating information;

(d) Building the capacity of local villagers for income-generating activities linked to the sustainable management of forests;

(e) Developing and testing scenarios for the registration of community forests;

(f) Promoting techniques for improving carbon sequestration by forests;

(g) Developing and promoting partnerships between community forests within and outside of the country;

(h) Strengthening the capacity of local villagers and municipal councils for the establishment of communal forests;

(i) Monitoring and evaluation, learning lessons and the dissemination of experiences.

46. A second project relates to animal waste, with a time frame for implementation of five years. It includes: actions relating to feasibility and market studies; setting up regional directorates; marketing and raising public awareness; identifying partners for

[5] The original communication is available at <http://unfccc.int/files/focus/application/pdf/nama_foc_prop_burkina_faso.pdf>.

implementation; building biodigesters; and research into, and the development and standardization of, equipment.

47. The third project relates to urban waste and wastewater, with a time frame for implementation of five years. It involves: the analysis and detailed mapping of soils; building biodigesters; setting up a system for the transportation of biogas; and identifying subcontractors, among other things.

48. The Ministry of Agriculture and Hydraulic Resources will be the focal point for the action and the National Office for Water and Sanitation will be responsible for its implementation.

49. The second proposal communicated by Burkina Faso relates to the National White Book to facilitate access to energy. It was developed to achieve the objectives for 2015 of facilitating access to modern energy forms to reduce poverty and of reaching the United Nations Millennium Development Goals.

50. The mitigation potential of the second proposal is estimated to be 3.3 Mt CO_2 eq. or 0.4 Mt CO_2 eq/year for the period 2008–2015.

51. The initiative is expected to contribute to the Government's targets of: providing 75 per cent of the population with access to modern cooking facilities by 2015; providing 52 per cent of the rural population with access to employment opportunities; and providing 66 per cent of the total population with access to electricity by 2015.

52. In addition, the proposal will deliver co-benefits, including an increase in the production of agroproducts for bigger markets; the modernization of social services (health, education, water, etc.); an improvement in living conditions, particularly of women; the sustainable use of natural resources; increased carbon storage/sinks; and improved income-generating opportunities in rural areas. The proposal, with a time frame for implementation of five years, identifies three main actions:

(a) The rational use of energy, which would involve, inter alia: an energy diagnostic; the identification of energy-saving measures; establishing energy managers in relevant ministries; the identification of companies for the implementation of recommendations from energy audits; awareness-raising tools targeting households and services; monitoring and evaluation; and the dissemination of best practices;

(b) The use of solar energy for rural electrification, which would involve: the identification of potentially suitable areas; feasibility studies; the development of project proposals and tenders; setting up electricity cooperatives; monitoring and evaluation; and the dissemination of lessons learned;

(c) The rational use of firewood for cooking, which would involve, inter alia: the development of prototypes of improved wood stoves; the identification of non-governmental organizations, associations and craftsmen to implement the project; developing awareness and marketing tools for households; monitoring and evaluation; and the dissemination of lessons learned.

53. Burkina Faso communicated that, with regard to support needs, it requires capacity-building support for: conducting monitoring and evaluation; estimating GHG emission abatement; using software for monitoring operational variables; and setting up a national MRV system.

Cambodia

54. Cambodia communicated that, considering that deforestation worldwide has contributed to around 20 per cent of global GHG emissions, it has been implementing a pilot project within the framework of reducing emissions from deforestation and forest

degradation in developing countries (REDD) since 2009, as part of its responsibility in tackling climate change.

Cameroon

55. Cameroon communicated that it will undertake NAMAs through REDD and CDM projects, reforestation, and sector-specific mitigation actions developed as part of its National Mitigation Strategy.

Central African Republic

56. The Central African Republic communicated the following NAMAs:

(a) An increase in forest cover from 11 per cent in 2005 to 25 per cent in 2050 through reforestation, forest management and the Africa Forest Law Enforcement and Governance (AFLEG) process;

(b) The promotion of sustainable management and the certification of forest products;

(c) The promotion of forestry and the placing of value on village, community and private plantings;

(d) The promotion and placing of value on non-ligneous forest products;

(e) The development of REDD activities (their mitigation potential is under evaluation);

(f) The promotion of improved techniques by using nitrogen-fixing species;

(g) The multiplication and popularization of forage seed in grazing areas (Ouham, Ouham-Pendé and Nana-Mambéré);

(h) The intensification of the production of improved farming seeds by farmers;

(i) The recovery of household waste (solid and liquid) from large cities for the production of green fertilizers and energy production (biogas);

(j) A programme to design new industrial areas, taking into account optimized consumption principles and urban sprawl limitation;

(k) The implementation of a new programme for rural housing aimed at building new rural ecological villages based on energy efficiency and the use of renewable energy;

(l) The upgrading of the Bouali I, II and III hydroelectric dams;

(m) The installation of mini-hydroelectric plants with a capacity of 4 MW/unit, amounting to a total of 35 MW by 2030 at various waterfalls in the country: Toutoubou, Baidou, Nakombo-Soso, Kembé and la-Mbi;

(n) The use of improved stoves – better use of traditional types of energy in the Central African Republic;

(o) The development of 4,000 MW of wind farm capacity: 1,000 MW in 2012 with a strong mitigation potential;

(p) Controlling vehicle exhaust emissions in major urban areas;

(q) A programme for natural gas importation (butane), with the goal that 80 per cent of households will consume this new source of energy;

(r) A national campaign to raise awareness about energy saving and energy-saving light bulbs;

(s) The installation of a relay station for receiving satellite images;

(t) The creation of a national observatory for the environment.

57. The Central African Republic stated that it has committed itself to undertake the mitigation actions listed above at the national level, in line with its socio-economic situation, but that, as an LDC, it will require financial, technological and capacity-building support in order to implement these actions.

Chad

58. Chad communicated the following NAMAs:

(a) In the energy sector:

(i) The promotion of renewable energies:

- The development of solar and wind energies;
- The use of biogas and biofuel;

(ii) Energy efficiency in urban and rural areas:

- The promotion of low-energy light bulbs;
- The promotion of the use of energy-saving wood-burning stoves;
- The rational use of traditional sources of energy, such as biomass;

(b) In the forestry sector:

(i) The strengthening of reforestation policy:

- The protection of existing forests;
- The improvement of the management of protected areas;
- The upkeep and protection of greenbelts around towns and villages;
- A contribution to the creation of the Great Green Wall;

(ii) The reduction of GHG emissions from deforestation and forest degradation (REDD-plus):

- The development of REDD-plus policy and strategy;
- Strengthening the technical skills of project managers;
- The development of an institutional and legal framework for implementing REDD-plus;
- The improvement of the knowledge of populations and decision makers about REDD-plus through communication actions;
- Mastering the funding mechanism to implement REDD-plus;

(c) In the agriculture sector:

(i) The multiplication and popularization of forage seed;

(ii) The upgrading of farms;

(iii) Composting and organic fertilizer-making;

(d) In the transport sector:

(i) The development of less polluting methods of transport;

(ii) The promotion of the exploration and use of biofuels.

59. Chad stated that its NAMAs are voluntary in nature and are fully part of the sustainable development of the country. In addition, it was stated that, as an LDC, the NAMAs proposed above would require international support in terms of funding, technology transfer and capacity-building for their implementation.

Chile

60. Chile communicated that it will implement NAMAs in order to achieve a 20 per cent reduction below the 'business as usual' emissions growth trajectory in 2020, as projected from the year 2007.

61. Energy efficiency, renewable energy, and land use, land-use change and forestry (LULUCF) measures will be the main focus of Chile's NAMAs.

62. Chile stated that, in order to accomplish its objective, it will need an appropriate level of international support and that its actions will be undertaken in accordance with the provisions of Article 12, paragraphs 1(b) and 4, and Article 4, paragraph 1, of the Convention.

63. Chile also stated that, in its view, although the text of the Copenhagen Accord does not fully reflect the Party's national position in terms of the characteristics that a substantive agreement to significantly reduce GHG emissions should have, and although it is not a legally binding instrument, it considers that the Accord will facilitate the negotiations towards a new universal and legally binding agreement on climate change.

64. Chile made a second submission on 2 August 2011, providing additional information. It stated that, since its first submission, the Government of Chile has been working to identify policies and programmes that could be developed into NAMAs. The Government has made an effort to gather information on potential NAMAs and, to that end, developed a template to specify the critical information for enabling the effective implementation of such NAMAs. The information included: an analysis of the potential emission reductions; the costs of implementation; and a suggested framework for measuring, reporting and verifying the resulting emission reductions. Several ministries have started to gather the information, which is from national and international studies. Chile mentioned that it would like the information generated through the process to help it to obtain national and/or international financing for the implementation of its NAMAs.

China

65. China communicated that it will endeavour to lower its CO_2 emissions per unit of GDP by 40–45 per cent by 2020 compared with the 2005 level. It also expressed the intention to increase the share of non-fossil fuels in primary energy consumption to around 15 per cent by 2020 and to increase forest coverage by 40 million ha and forest stock volume by 1.3 billion m3 by 2020 compared with the 2005 levels.

66. China stated that the above-mentioned autonomous domestic mitigation actions are voluntary in nature and that they will be implemented in accordance with the principles and provisions of the Convention, in particular Article 4, paragraph 7. The Party also stated that its communication is made in accordance with the provisions of Article 12, paragraphs 1(b) and 4, and Article 10, paragraph 2(a), of the Convention.

Colombia

67. Colombia communicated that it is undertaking studies on its mitigation potential and on abatement cost curves for the transport, agriculture, energy, waste management and industrial sectors as part of its national strategy of low-carbon emissions development.

68. The Party communicated the following preliminary mitigation actions in three categories:

(a) Unilateral actions: Colombia will guarantee that at least 77 per cent of the total energy capacity installed by 2020 will be generated from renewable sources. These are actions that Colombia commits to undertake using its own resources, both private and public; the Party would not require any international or market-based funding;

(b) Actions with financial support:

(i) Colombia will reduce deforestation in the Colombian Amazon rainforest to zero by 2020;

(ii) Colombia will stimulate the growth of biofuel production, such as ethanol and biodiesel, without endangering the natural forests or the food security of the Colombian people, and by promoting the use of these fuels in the national market with the aim of achieving a 20 per cent share of total national fuel consumption by 2020. These are actions that Colombia is interested in undertaking and willing to do, but it lacks the necessary resources or capacity, and will therefore require financial support for their implementation;

(c) Actions related to carbon markets:

(i) Colombia supports the use of market-based mechanisms in order to contribute to GHG mitigation actions in developing countries. Colombia has made use of the existing flexibility mechanisms under the Kyoto Protocol, especially the CDM, for which Colombia has a project portfolio with an estimated annual emissions reduction potential of 17.4 Mt CO_2;

(ii) Colombia has great potential to reduce emissions from deforestation (REDD) through the protection of endangered forests and the inclusion of new protected areas in the national parks programme;

(iii) Colombia has estimated a total emissions reduction of up to 54.8 Mt CO_2 by 2020 through the implementation of the CDM in the energy, forest, industrial, transport and waste management sectors. Up to now, eight projects in Colombia have been accredited with 763,371 certified emission reduction (CER) units from activities related to wind power generation, mass transport systems and hydroelectric power generation;

(iv) Colombia will encourage commercial reforestation through the use of Forest Incentive Certificates;

(v) Colombia has great mitigation potential that could be realized through the implementation of the existing flexibility mechanisms under the Kyoto Protocol and the future mechanisms that may arise from negotiations, which would help the Party to achieve greater emission reductions by deviating from the 'business as usual' scenario.

69. The implementation of these mitigation actions could be supported by carbon market-based mechanisms. These actions include: (a) the capacity to measure, report and verify emission reductions for their subsequent sale; (b) the availability of measuring and monitoring tools (similar to CDM mechanisms); (c) the possibility of achieving the financial closure of the projects or activity programmes with the incentive of selling the emission reductions.

Congo

70. Congo communicated the following NAMAs:

(a) The promotion of the use of improved stoves;

(b) Drawing up waste management plans for major urban areas;

(c) The construction of monitored municipal waste dumps in major urban areas;

(d) The monitoring of vehicle exhaust emissions in major urban areas;

(e) The creation of a national environment observatory;

(f) The development of REDD;

(g) The development of forestry in degraded forest areas and conducting forestry activities in dense forests;

(h) Drawing up a national land usage map;

(i) Setting up air pollution, water and soil quality monitoring stations;

(j) The installation of a relay station for receiving satellite images;

(k) The promotion of energy efficiency;

(l) The development of hydroelectric potential;

(m) The promotion of improvement techniques by using nitrogen-fixing species;

(n) The promotion of sustainable forest management and the certification of forest products;

(o) The promotion of forestry and the enhancement of village, community and private plantations;

(p) The promotion and enhancement of non-ligneous forestry products;

(q) The upgrading of the Djoue and Moukoukoulou hydroelectric dams;

(r) The recovery of flared gas in oil production;

(s) The reforestation of erosion hollows;

(t) The promotion of jobs for youth through regeneration and the sustainable management of forest ecosystems;

(u) The upgrading of transport, electricity distribution and drinking water infrastructure;

(v) The training and awareness-raising of the population and economic operators in the practice of forest conservation.

71. The Congo stated that the above-mentioned actions were identified while the country is awaiting the finalization of methodological and strategic approaches as part of the implementation process of REDD, on the basis of its two national communications (base years of 1996 and 2000).

72. The Party expressed its hope that a new international climate accord would be agreed that has far-reaching goals for reducing GHG emissions and that has sufficient, secured and predictable funding to support the mitigation and adaptation efforts of developing countries.

Cook Islands

73. The Cook Islands communicated that the Government has set a policy goal for reaching 100 per cent renewable electricity by 2020, with a phased-in implementation plan that achieves 50 per cent by 2015.

74. The submission specifies that the Government will initially require 550,000 New Zealand dollars to cover the annual cost of a renewable energy technology trades training programme for eight years. These resources will also cover the costs of supporting the

development of new legal and regulatory frameworks, in particular as required for private-sector investment in renewable electricity systems.

Costa Rica

75. Costa Rica communicated that it will implement a "long-term economy-wide transformational effort to enable carbon-neutrality" that will help the country to significantly deviate from 'business as usual' emission scenarios from now until 2021 and beyond.

76. As a first step in this context, Costa Rica stated that it is currently in the process of identifying the most relevant sectors and concrete policies and measures that are likely to be developed as specific NAMAs following agreed guidance and due process. On a preliminary basis, efforts will focus on the following sectors:

(a) Transport;

(b) Energy;

(c) Forestry;

(d) Waste management.

77. Costa Rica stated that this initial list of sectors does not preclude the further inclusion of additional sectors or even more specific actions within sectors as the on-going process continues to provide more specific data.

78. Costa Rica also communicated that the preliminary estimates of incremental costs to implement the package of identified actions would involve a level of financing equivalent to approximately 1 per cent of annual national GDP in addition to regular projected investments. To allow immediate and up scaled action towards carbon neutrality and to fulfil the incremental costs, Costa Rica will require the support of the international community through a broad range of financial mechanisms, including international cooperation (official development assistance), grants, soft loans, private investment and climate-related market-based funding. Additional support will also be required for policy and capacity development and implementation, including the design and implementation of the appropriate financial architecture and governance requirements, as well as the additional administrative obligations that will be potentially acquired through specific NAMAs. The entire scope of the Party's actions is of a voluntary nature and contingent upon these supporting conditions.

79. Costa Rica added that proactive bilateral and multilateral cooperation as well as the participation of development entities and markets will be critical to allow the country to expand current efforts and undertake new ones in order to meet its projected climate change goals and thus increase its contribution to global mitigation targets. Coherent and transparent national and international monitoring, reporting and verification schemes for national GHG emissions, mitigation actions and the international support provided will be implemented as required and in accordance with the UNFCCC guidelines and shall address both the effectiveness of actions as well as the support provided.

Côte d'Ivoire

80. Côte d'Ivoire communicated the following NAMAs:

(a) In the energy sector:

(i) The drawing up and implementation of an action plan for the development of renewable energy, such as mini-hydroelectric, PV and biomass power plants, for decentralized electrification;

(ii) The popularization of the use of low-energy light bulbs;

(iii) Undertaking actions to save energy from wood burning by promoting improved carbonization and by popularizing wood energy efficient homes;

(iv) In the forestry and forest products sector:

(v) Sustainably reconstitute, arrange and manage the forests on rural lands and the forests on the permanently held State-owned lands;

(vi) The drawing up and implementation of a national plan to fight soil degradation;

(vii) Ensuring the integrated and sustainable development of water resources;

(b) In the agriculture sector: the development of sustainable farming;

(c) In the transport and industrial sectors:

(i) Setting up an environmental monitoring system for checking air, water and soil quality;

(ii) Conducting awareness-raising campaigns aimed at the transport and industrial sectors for the adoption of clean production and consumption methods;

(d) Cross-sectoral measures: the drawing up and implementation of a national strategy for the reduction of catastrophic risk.

81. Côte d'Ivoire expressed the hope that future negotiations may be successful in:

(a) Continuing the two-track negotiation process;

(b) Limiting the negotiation framework to the provisions of the Copenhagen Accord, the Kyoto Protocol and the Bali Road Map, thereby keeping the Kyoto Protocol in force. Developed countries must commit to significantly reducing their GHG emissions and to figures conforming to the recommendations of the Intergovernmental Panel on Climate Change (IPCC);

(c) Creating a legally binding instrument at the end of the process of the AWG-LCA;

(d) Substantially strengthening the volume of funding. The funding announced in the Copenhagen Accord is significantly below that required by developing countries in order to efficiently combat the effects of climate change;

(e) Improving the governance structure of the funds in order to facilitate rapid access to them by developing countries, among other things.

82. The Party stated that the secretariat must be watchful in organizing the next negotiations so that the results below are achieved at COP 16:

(a) An amended Kyoto Protocol with emission reduction figures to be achieved by Annex I Parties in accordance with the recommendations of the IPCC;

(b) A legally binding instrument containing the main objectives of the Bali Road Map;

(c) The adoption of appropriate decisions that efficiently implement the aforementioned instruments.

Dominica

83. Dominica communicated its Low-Carbon Climate-Resilient Development Strategy, which is the key platform for supporting the Government's Growth and Social Protection

Strategy.[5] The Government is seeking to reduce the increasing costs of electricity generation and ensure a cleaner, more environmentally friendly energy source by exploring the possibility of using alternative forms of energy. Dominica has tremendous potential for geothermal energy and the Government expects that renewable sources will eventually be utilized on a commercial scale.

84. The Government also expects to undertake the following activities in its effort to develop renewable energy:

(a) Developing and commercializing geothermal resources through: training programmes; the development of inventories of geothermal resources; the assessment of technology options; the establishment of regulations for harnessing and exporting geothermal energy; designing and financing a geothermal power plant (estimated 120 MW); and the establishment of soft financing for community and small-scale plants;

(b) Harnessing solar energy through: training programmes; feed-in tariffs; incentives for using solar heating in homes and public buildings; assessments of viable photovoltaic technologies; designing and financing a pilot solar power facility; and soft financing for community and small-scale private plants;

(c) Harnessing wind energy through: training programmes; the development of a wind atlas for Dominica; feed-in tariffs for wind energy producers; designing and financing a wind farm on the east coast; and soft financing for community and small-scale private plants;

(d) Harnessing hydropower through: training programmes; the development of an inventory of hydroenergy potential in the country and the assessment of the commercial viability of microhydro and run-of-river technologies; feed-in tariffs for hydropower producers; designing and financing a pilot hydropower plant; and soft financing for community and small-scale plants;

(e) Promoting 'green communities' through: training on energy and GHG auditing and energy conservation and low-carbon technologies; financing and commissioning energy/GHG audits of cities, public buildings and highway lighting; establishing soft financing for energy conservation and conversion to renewable energy technology, including solar-powered LED street lights; the establishment of green areas in urban development; making public buildings and infrastructure low carbon in Portsmouth; and establishing vehicle upgrade and maintenance programmes;

(f) Reducing GHG emissions from waste management through: GHG audits of waste landfills; upgrading roads to improve connectivity and reduce travel time and emissions from vehicles; assessing appropriate waste-to-energy technologies; and implementing a pilot project to convert waste to energy in Roseau;

(g) Protecting carbon sinks through: training on inventory procedures; building the capacity of the Forestry Division to undertake a forestry inventory; determining the carbon uptake of existing forest, agricultural land and marine areas; assessing the viability of protecting additional forest, agricultural land and marine areas; and establishing a compensation framework to support the protection of forest and agricultural land;

(h) Developing biofuels through: training; assessing the viability of first- and second-generation biofuels; establishing soft financing for a pilot biofuel production plant; and developing supporting legislation;

[5] The original communication is available at <http://unfccc.int/cooperation_support/nama/items/6982.php>.

(i) Delivering financing for low-carbon technologies through: training on climate change financing; assessing options for financing the conversion to low-carbon technologies using market-based instruments (e.g. a carbon levy); and designing and establishing a climate change trust fund to finance low-carbon technologies;

(j) Developing low-carbon management services and technologies through: training programmes on energy and GHG auditing; establishing standards and certification programmes for low-energy appliances and equipment; and promoting the certification of low-carbon management services and technology providers.

85. As regards finance, Dominica communicated that funds in excess of those received from donors under current financing mechanisms will be required to address climate change in a meaningful manner. The country anticipates priority interventions under its Low-Carbon Climate-Resilient Development Strategy being supported by financing from a range of sources, including the Global Environment Facility, the Climate Investment Funds, the Green Climate Fund, SIDS DOCK and others.

Egypt

86. Egypt communicated that its national team of experts, composed of representatives of relevant ministries and other stakeholders, has developed a preliminary list of NAMA projects, as follows:

(a) Greater Cairo ring road afforestation project;

(b) Scrapping and replacement programme for two-stroke motor cycles;

(c) Greater Cairo metro network phase 1 and 2 project;

(d) Fuel switching for industrial processes in the Delta Steel Mill Company;

(e) Fuel switching from light oil and cooking gas to natural gas in the El-Nasr Company;

(f) Fuel switching from mazut to natural gas in the General Company for Paper Industry;

(g) Fuel switching from heavy oil to natural gas in the El-Nasr Wool and Selected Textiles Company;

(h) Fuel switching from solar to natural gas at the Egyptian Plastic and Electrical Industries Company;

(i) Egypt household CFL project;

(j) Project for energy efficiency in water pumping systems at the Drinking Water Company in Greater Cairo;

(k) Reduction of natural gas leaks in the gas distribution networks of the Ministry of Petroleum;

(l) Street lighting project of the North Cairo Electricity Distribution Company.

87. A stakeholder consultation was conducted to allow different sectors to assess mitigation potential and to identify projects for implementation and the financial and technical support needed to implement them. The country has initiated the establishment of contact with relevant international partners, in order to seek support for the development of a low-emission development strategy and for the preparation of the above-mentioned preliminary list of NAMAs.

88. Egypt stated that its envisaged domestic mitigation actions within the framework of NAMAs will be voluntary and their implementation will be subject to the provision of

financial and technical support by developed country Parties in accordance with the principles and provisions of the Convention. Furthermore, national activities of the CDM established under the Kyoto Protocol would not be excluded.

Eritrea

89. Eritrea communicated its ongoing NAMAs, listed below:

(a) Research, develop, demonstrate, apply, diffuse and transfer technologies, practices and processes that control, reduce or prevent anthropogenic emissions of GHGs not controlled by the Montreal Protocol in the energy, transport, industry, agriculture, forestry and waste management sectors;

(b) Develop and implement energy conservation and energy efficiency projects;

(c) Implement projects and programmes that reduce deforestation and forest degradation;

(d) Implement projects and programmes that enhance soil carbon stocks in agricultural soils;

(e) Develop and implement projects and programmes for the sustainable management of biomass resources, forests and the sea, as well as other terrestrial, coastal and marine ecosystems, thereby conserving and enhancing sinks and reservoirs of all GHGs not controlled by the Montreal Protocol;

(f) Develop and elaborate appropriate and integrated plans which are supportive of both adaptation and mitigation actions for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas affected by drought and desertification, as well as floods;

(g) Mainstream climate change considerations in Eritrea's relevant social, economic and environmental policies and actions to mitigate or adapt to climate change;

(h) Cooperate in scientific, technological, technical, socio-economic and other research and systematic observation related to the climate system;

(i) Develop data archives related to the climate system and intended to further the understanding of and contribute to the reduction of the remaining uncertainties regarding the causes, effects, magnitude and timing of climate change and the economic and social consequences of various response strategies;

(j) Promote and cooperate in the exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system and climate change, and to the economic and social consequences of various response strategies;

(k) Promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process, including that of non-governmental organizations;

(l) Develop, periodically update, publish and make available to the COP national inventories of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol using comparable methodologies agreed upon by the COP;

(m) Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change;

(n) Communicate to the COP information related to implementation, in accordance with Article 12 of the Convention, as well as cooperate in the reporting of technological, capacity-building and financial support by developed countries.

90. Eritrea stated that it urges developed country Parties to show leadership by taking drastic action to reduce their domestic GHG emissions and by providing due support for developing countries to acquire the capacity, technology and finance to cover the costs of mitigation and climate change adaptation measures. Eritrea also strongly urged concrete changes to be made to the procedures common in international funding, so that financial and technological support dedicated to climate change purposes would be accessible to eligible countries in a fair, non-discriminatory and transparent manner.

91. Eritrea also added that, in accordance with the principle of common but differentiated responsibilities of all countries, it reiterates its unyielding commitment to undertake its obligations under the Convention. As a country that pollutes little but that is most vulnerable to the impacts of climate change, it fully realizes that the success of its efforts for sustainable development will depend on properly addressing environmental issues. In this regard, Eritrea has been striving within its means and capacity to implement climate change mitigation and adaptation programmes.

Ethiopia

92. Ethiopia communicated the following voluntary NAMAs, which it is planning to implement by 2020:

(a) Electricity generation from renewable energy for the grid system:

(i) Hydropower:

- Beles Project, with 460 MW electric power generation capacity; to be completed in 2010;
- Gibe III Project, with 1,870 MW electric power generation capacity; to be completed in 2013;
- Fan Project, with 100 MW electric power generation capacity; to be completed in 2013;
- Halele Werabesa Project, with 422 MW electric power generation capacity; to be completed in 2015;
- Chemoga-Yeda Project, with 278 MW electric power generation capacity; to be completed in 2015;
- Gibe IV Project, with 1,472 MW electric power generation capacity; to be completed in 2015;
- Genale III Project, with 258 MW electric power generation capacity; to be completed before 2014;
- Genale IV Project, with 256 MW electric power generation capacity; to be completed before 2015;
- Geba I and II Projects, with 366 MW electric power generation capacity; to be completed in 2015;
- Gojeb Project, with 150 MW electric power generation capacity; to be completed in 2015;

(ii) Hydropower projects under study:

- Tekeze Project, with 450 MW electric power generation capacity; the study to be completed in 2012;
- Beko Abo Project, with 1,600 MW electric power generation capacity; the study to be completed in 2010;

- Boarder Project, with 1,200 MW electric power generation capacity; the study to be completed in 2012;

- Mendeya Project, with 2,000 MW electric power generation capacity; the study to be completed before 2012;

- Gibe V Project, with 600 MW electric power generation capacity; the study to be completed in 2012;

- Wabi Shebele Project, with 460 MW electric power generation capacity; the study to be completed in 2012;

- Birbir Project, with 467 MW electric power generation capacity; the study to be completed in 2012;

- Lower Dedessa Project, with 613 MW electric power generation capacity; the study to be completed in 2012;

- Dabus Project, with 425 MW electric power generation capacity; the study to be completed in 2010;

- Tams Project, with 1,000 MW electric power generation capacity; the study to be completed in 2010;

- Genale Dawa V Project, with 100 MW electric power generation capacity; the study to be completed in 2012;

(iii) Wind projects:

- Ashengoda Wind Power Project, with 120 MW electric power generation capacity; to be completed in 2012;

- Adama Wind Power Project, with 51 MW electric power generation capacity; to be completed in 2011;

- Adama II Wind Power Project, with 51 MW electric power generation capacity; to be completed in 2013;

- Assela Wind Power Project, with 100 MW electric power generation capacity; to be completed in 2013;

- Ayisha Wind Power Project, with 300 MW electric power generation capacity; to be completed in 2012;

- Debre Birhan Wind Power Project, with 100 MW electric power generation capacity; to be completed in 2013;

- Messobo Wind Power Project, with 42 MW electric power generation capacity; to be completed in 2012;

(iv) Geothermal projects:

- Aluto Langano Geothermal Project, with 75 MW electric power generation capacity; to be completed in 2012;

- Tendaho Geothermal Project, with 100 MW electric power generation capacity; to be completed in 2018;

- Corbeti Geothermal Project, with 75 MW electric power generation capacity; to be completed in 2018;

- Abaya Geothermal Project, with 100 MW electric power generation capacity; to be completed in 2018;

- Tulu Moye Geothermal Project, with 40 MW electric power generation capacity; to be completed in 2018;

- Dofan Project, with 60 MW electric power generation capacity; to be completed in 2018;

(b) Biofuel development for road transport and household use:

- Project to produce 63.36 million litres of ethanol, from 2010 until 2015;

- Project to produce 621.6 million litres of biodiesel, from 2010 until 2015;

(c) Electricity generation from renewable energy for off-grid use and direct use of renewable energy (from 2010 until 2015):

- Project to install 150,000 solar home systems;

- Project to construct 65,000 small hydroelectric power generation facilities;

- Project to install 300 wind pumps;

- Project to install 300 solar pumps;

- Project to install 3,000 institutional PVs;

- Project to install 3 million solar lanterns ;

- Project to install 3,500 solar water heaters;

- Project to distribute 10,000 solar cookers;

- Project to distribute 900,0000 improved biomass household stoves;

- Project to distribute 10,000 biodiesel stoves;

- Project to install 25,000 household biogas digesters;

- Project to install 1,000 institutional biogas plants;

(d) Transport – railway projects with trains to run with electricity generated from renewable energy:

- Route 1 (Addis Ababa–Modjo–Awash); 656 km, to be completed in 2015;

- Route 2 (Modjo–Shashemene–Awassa–Konso–Woyito, including Konso–Moyale); 903 km, date of completion to be determined;

- Route 3 (Addis Ababa–Ejaji–Jimma–Guraferda–Dima, directed to Boma); 637 km, date of completion to be determined;

- Route 4 (Ejaji–Nekemt–Asossa–Kurmuk); 460 km, date of completion to be determined;

- Route 5 (Awash–Kombolcha–Mekele–Shire); 730 km, date of completion to be determined;

- Route 6 (Finoteselam–Bahirdar–Wereta–Weldia–Mile–Djibouti); 740 km, date of completion to be determined;

- Route 7 (Wereta–Azezo–Metema); 248 km, date of completion to be determined;

- Route 8 (Adama–Indeto–Gasera); 215 km, date of completion to be determined;

- Route 9 (Addis Ababa Light Rail Transit Project); 300 km; to be completed in 2020;

(e) Forestry forests:

- Enhanced district-level reforestation actions to increase the vegetation cover of 214,440 km2 of degraded lands, lands affected by gullies and slopes, including through the management of community areas closed off to grazing;
- A total of 28,736.70 km2 of natural high forest area sustainably managed in order to reduce GHG emissions from deforestation and forest degradation;
- A total of 4,390.96 km2 of deciduous forest land sustainably managed in order to reduce GHG emissions from deforestation and forest degradation;
- A total of 60,360 km2 of national parks sustainably managed in order to reduce GHG emissions from deforestation and forest degradation;
- A total of 198,175 km2 of existing forests that are providing non-timber forest products to be maintained as a buffer area in order to mitigate desertification;
- A total of 52,695 km2 of forest in exhaustion or production forests established and sustainably managed for the purpose of sequestrating carbon;
- A total of 51,496 km^2 of wetlands wisely managed and sustainably used;

(f) Agriculture:

- The application of compost on 80,000 km^2 of agricultural land of rural local communities to increase carbon retention by the soil;
- The implementation of agro-forestry practices and systems on 261,840 km^2 of agricultural land to improve livelihoods and for carbon sequestration;

(g) Waste management:

- Repi-Addis Ababa Project to reduce the generation of CH4 from 14.56 million m3 of deposited urban waste;
- Addis Ababa Project to reduce the generation of CH4 from 1 million m3 of urban waste with a growth rate of 2.3 per cent/year;
- Mekele Project to reduce the generation of CH4 from 19,345 t of urban waste with a growth rate of 6.1 per cent/year;
- Adama Project to reduce the generation of CH4 from 27,010 t of urban waste with a growth rate of 4.2 per cent/year;
- Bahir Dar Project to reduce the generation of CH4 from 10,220 t of urban waste with a growth rate of 4.8 per cent/year;
- Diredawa Project to reduce the generation of CH4 from 255 t of urban waste with a growth rate of 2.7 per cent/year;
- Hawasa Project to reduce the generation of CH4 from 5,840 t of urban waste with a growth rate of 6.4 per cent/year;
- Harari Waste to Energy Project to reduce the generation of CH4 from 99.4 t of urban waste, which is estimated to grow by 2 per cent/year;
- Kaliti Waste Treatment Facility to reduce the generation of CH4 from 27.4 million m^3 of liquid waste with a growth rate of 2.1 per cent/year.

93. Ethiopia stated that it hopes that these actions will be supported both financially and technologically, as promised by the Copenhagen Accord.

Gabon

94. Gabon communicated the following NAMAs, to be implemented by 2020:

(a) In the energy sector:

- The construction of a hydroelectric dam to provide power to major urban centres;
- The installation of solar panels in buildings for energy production for clean public lighting and the provision of power to some households and administrative services in certain rural and urban areas of the country;

(b) Strengthening the energy efficiency of public buildings and industrial units:

- The construction of low energy consumption buildings; using low energy consumption building supplies; the popularization of low energy consumption lighting sources;
- The building of low carbon emission industrial units; the development of industrial units under the CDM;

(c) Prohibition of gas flaring in the oil production environment:

- Development under the CDM;
- The powering of thermal units for electricity generation;
- The production of liquefied natural gas (LNG) and residential gas;

(d) Promotion of a clean transport sector:

- The development of a high-quality public transport system with gas-powered buses (using formerly flared gas for a different purpose);
- The importation and sale of second-hand cars less than five years old; the promotion of a premium for the scrapping of cars and green car labels; the importation of new vehicles running on LNG;

(e) Waste recovery:

- The construction of waste and wastewater treatment centres; development under the CDM.

95. Gabon also communicated its NAMAs in the forestry sector and provided information on the goals that could be achieved in 2020 both with and without international funding, as listed below:

(a) Sustainable forest management:

- Certified forest areas on the basis of internationally recognized sustainable development standards, from 2 million ha in 2010 to 12 million ha in 2020 (6 million ha with own funds and 4 million ha with the support of various international mechanisms);
- Forest areas under sustainable management, from 3.5 million ha in 2010 to 12 million ha in 2020 (3.5 million ha with own funds and 5 million ha with the support of various international mechanisms);
- Forest areas under preparation for management from 9 million ha in 2010 to 12 million ha in 2020 (without support from international funding);

(b) Reforestation/regeneration:

- The planting/enrichment of degraded areas from 30,000 ha in 2010 to 10,040,000 ha in 2020 (10,000 ha with own funds and 10 million ha with the support of various international mechanisms); work to be undertaken across the forest concession under sustainable management;

- Afforestation from 0 ha in 2010 to 1 million ha in 2020, with the support of various international mechanisms;

- Community forest/agroforest, from 0 ha in 2010 to 2 million ha in 2020 (100,000 ha with own funds and 1.9 million ha with the support of various international mechanisms);

(c) Forestry potential:

- Annual logging potential, from 10 million m^3 in 2010 to 35 million m^3 in 2020 (10 million m^3 with own funds and 15 million m^3 with the support of various international mechanisms); the volume increase is due to sustainable forest management;

- Annual crop potential, from 3.5 million m^3 in 2010 to 14 million m^3 in 2020 (4 million m^3 with own funds and 6.5 million m^3 with the support of various international mechanisms);

(d) Forest layering:

- Layering zone 1 (coastal), from 5 million ha in 2010 to 10 million ha in 2020 (with the support of various international mechanisms);

- Layering zone 2 (coastal), from 0 ha in 2010 to 21,667,000 ha in 2020 (the entire national territory);

(e) National forest inventory: from 6 million ha in 2010 to 22 million ha in 2020 (6 million ha with own funds and 10 million ha with the support of various international mechanisms);

(f) Biodiversity conservation: from 11.2 per cent of the national territory in 2010 to 15 per cent of the national territory in 2020 (a total area of 4 million ha).

96. Gabon stated that its actions are voluntary and shall be implemented in accordance with the provisions of the Convention, in particular Article 4, paragraphs 1 and 7, Article 10, paragraph 2(a), and Article 12, paragraphs 1(b) and 4. The use of the CDM established under the Kyoto Protocol is not excluded.

Gambia

97. The Gambia submitted a document[7] containing comprehensive information on NAMAs and an annex with concept notes for 10 priority NAMAs. The document specifies actions to contribute towards the global efforts in meeting the goal of keeping temperature increase to below 2 °C. Such actions were developed through an extensive consultative process involving representatives from the public and private sectors, local government authorities and elected representatives, civil society organizations and women's groups.

98. The Gambia communicated the following list of eight priority NAMAs and two mitigation/adaptation projects:

(a) Develop a low-emission development strategy;

(b) Increase energy production from renewable sources;

[7] The original communication is available at <http://unfccc.int/files/focus/application/pdf/nama_foc_prop_gambia.pdf>.

(c) Promote the use of energy-efficient cooking stoves;

(d) Reduce energy consumption by reducing transmission and distribution system losses to 15 per cent by 2030;

(e) Improve storage facilities and promote the use of post-harvest technologies;

(f) Restore degraded grazing land through the multiplication and popularization of the forage seed planting of multi-purpose seed in grazing areas;

(g) Promote an integrated crop-livestock system by planting nitrogen-fixing crops and encourage spot- and zero-burning practices;

(h) Promote the cultivation of high-yielding rice;

(i) Restore and rehabilitate degraded forest land, protect and conserve wetlands and develop green belts around human settlements, national forests, wildlife parks and protected areas through afforestation and reforestation activities;

(j) Promote the integrated management of urban and peri-urban solid and liquid waste.

99. It was mentioned that full NAMA proposals for the concepts would be further developed to provide detailed information on the mode of implementation, the institutions for implementation and the proposed MRV processes.

100. The Gambia communicated that the proposed funding needed for the 10 NAMAs identified above is USD 118,144,000. It was mentioned that details of the cost of the activities would be broken down into the cost of more specific actions during the development of the full proposals.

Georgia

101. Georgia communicated the following NAMAs:

(a) To establish NAMAs in the context of sustainable development and to achieve a measurable, reportable and verifiable deviation from the baseline (below 'business as usual' levels);

(b) To establish the baseline or reference case against which the action shall be measured, reported and verified;

(c) To develop a low-carbon growth plan and low-carbon strategy, in particular through the use of renewable energy investments and global cooperation;

(d) To support the CDM as one of the most important means for further cooperation in the field of NAMAs, since the CDM holds the potential to lead to significant investments, better environmental performance, job creation and poverty alleviation.

102. Georgia also communicated that all mitigation actions implemented by Georgia will be voluntary and supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner, through existing mechanisms, the Technology Mechanism, and other mechanisms established by the Copenhagen Accord.

Ghana

103. Ghana communicated the following initial list of NAMAs, which it states requires further detailed analysis, in particular as they relate to the actual levels of emission reductions as a result of the implementation of these actions:

(a) In the energy sector:

(i) Electricity supply:

- Switch to natural gas (combined cycle) from thermal generation using light crude oil;

- Retrofitting existing hydroelectric dams and building more hydroelectric dams;

- Off-grid/independent generation using diesel and gasoline ('business as usual' levels): improve the reliability of electricity supply through improved maintenance, timely expansion and upgrading, and expand grid access to discourage the need for off-grid generation;

- Promote electricity generation from renewable energy sources to increase the share of renewables to 10–20 per cent by 2020;

(ii) Electricity transmission:

- Current transmissions losses stand at 5–6 per cent: reinforce transmission systems to reduce transmission losses to 3 per cent and balance the generation and transmission systems;

(iii) Electricity distribution:

- Current total distribution system losses stand at 26 per cent: standardize transformers, and expand and maintain distribution systems on a timely basis;

(iv) Electricity end use:

- Inefficient appliances and practices currently used: develop and enforce standards and labels for appliances, and increase public awareness of energy conservation;

- Kerosene currently used for lighting and cooking: promote and support solar PV lighting, and increase the rate of rural electrification;

(v) Transport sector – infrastructure/modes:

- Inadequate transport network ('business as usual'): expand the road infrastructure and develop the infrastructure for rail, maritime, air, and inland water transport systems;

- Poor road conditions ('business as usual'): improve road conditions by increasing the percentage of paved road;

- Limited infrastructure for non-motorized transport ('business as usual'): expand the infrastructure for non-motorized transport;

(vi) Transport sector – services:

- Inefficient public transport system ('business as usual'): develop and improve facilities for the public transport system;

- High preference for the use of private vehicles ('business as usual'): incentivize the use of public transport and promote carpooling;

(vii) Transport sector – fuel use:

- Poor road maintenance practices ('business as usual'): enforce road worthiness certification requirements, retrofit existing refinery infrastructure and ensure that new refineries produce non-metallic-based gasoline;

- High proportion of vehicles use metallic-based gasoline ('business as usual'): substitute the use of gasoline with compressed natural gas (CNG), LPG and electricity for public transport;

- Predominant use of gasoline and diesel fuels ('business as usual'): promote the production and use of biofuels as transport fuel;

(viii) Transport sector – vehicle technology:

- Predominant use of conventional Euro II vehicles manufactured before 2004 ('business as usual'): promote the use of Euro III vehicles and above, as well as the use of flexi-vehicles; institute measures to promote and switch from the use of gasoline and diesel fuels to the use of CNG, LPG and electricity for public transport;

(ix) Residential fuel use:

- High percentage of wood fuel (charcoal and firewood) used for cooking ('business as usual'): promote the use of LPG;

- Use of inefficient cooking devices ('business as usual'): promote the use of energy-efficient cooking devices;

- Use of inefficient carbonization technology ('business as usual'): promote the use of efficient and clean carbonization technologies;

- Use of unsustainable wood harvesting practices ('business as usual'): establish more woodlots and promote the reuse of wood residues;

(x) Manufacturing industry:

- Low power factor, and inefficient energy and other resource utilization ('business as usual'): improve the power factor correction across industries and institute energy-efficient measures in industrial operations; improve the resource efficiency in industries to promote sustainable production and consumption;

(xi) Oil and gas production:

- Fugitive and other GHG emissions associated with oil and gas production and utilization ('business as usual'): promote zero fugitive emissions, and assess, promote and incorporate CCS in oil and gas production and utilization;

(xii) Industrial processes – aluminium production:

- CO_2 is generated in association with aluminium smelting as a result of the anode paste used as a reducing agent ('business as usual'): reduce CO_2 emissions from anode reactions;

(b) In the agriculture sector – crop production:

(i) Land preparation:

- Uncontrolled burning practised ('business as usual'): promote spot and zero burning practices;

- Mechanized land preparation practised ('business as usual'): promote minimum tillage and incentivize the use of biofuels for mechanized agriculture;

(ii) Cultivation:

- Use of nitrogen-based fertilizers ('business as usual'): promote the use of organic fertilizers and the integrated use of plant nutrients;

- Predominant cultivation of rice in low lands ('business as usual'): promote the cultivation of high-yielding upland rice;

(iii) Harvest to post-harvest:

- Burning of crop residues practised ('business as usual'): promote the recycling of crop residues;

- High post-harvest losses ('business as usual'): improve storage facilities and promote the use of post-harvest technologies;

(c) In the LULUCF/forestry sector:

(i) Land conversions:

- High decline in natural forest estates ('business as usual'): promote sustainable forest management, implement the REDD-plus mechanism, implement various forest governance initiatives (the Voluntary Partnership Agreement and the Forest Law Enforcement Governance and Trade, a non-legally binding instrument), rehabilitate degraded wetlands, and develop and enforce land-use plans;

(ii) Degraded forest lands:

- Low rate of rehabilitation of degraded forest lands ('business as usual'): enhance the rehabilitation of degraded forest lands, promote small afforestation/reforestation activities at the community level, and establish commercial plantations;

(iii) Solid waste disposal (landfill):

- Net CH_4 emissions due to the inappropriate management of waste ('business as usual'): promote waste separation and composting, support waste-to-energy initiatives (sawdust, oil palm waste and other agricultural waste/residue), capture and utilize CH_4 gas from landfill sites, and institute measures to minimize waste generation;

(iv) Wastewater handling:

- Inadequate and poorly maintained wastewater treatment plants, improper disposal of sludge and irregular operation and maintenance ('business as usual'): build, operate and maintain wastewater treatment plants.

104. Ghana also stated that detailed analysis will provide further indications as to which actions can be undertaken domestically and which actions will require international support in terms of technology, finance and capacity-building for the purpose of measuring, reporting and verifying the actions and support.

Guinea

105. Guinea communicated proposals[8] for a framework for the development of two NAMAs: one in the energy sector and one in the agriculture sector.

106. The first proposal involves the development of energy generation from renewable sources, with a time frame for implementation of five years. Guinea communicated that 37 per cent of its GHG emissions come from energy production and use in the country and that substituting thermal electricity generation for photovoltaic systems and/or hydroelectricity would reduce growth in emissions, which is expected to double by 2020. The project implementation would improve access to energy in rural areas and avoid significant levels of GHG emissions.

107. The main activities include:

(a) The development of an action plan for decentralized renewable energy electrification;

[8] The original communication is available at <http://unfccc.int/files/focus/application/pdf/nama_foc_prop_guinee.pdf>.

(b) Supporting research into accelerating the use of renewable energy;

(c) The construction of a few multi-purpose microdams.

108. Guinea stated that partners for implementation identified include the Ministry of Energy and Environment, private-sector entities, research institutions, and international organizations such as the United Nations Development Programme, the United Nations Industrial Development Organization and the Global Environment Facility.

109. The second proposal involves the development of a NAMA for the intensification of agriculture and livestock production, with a time frame for implementation of five years. According to Guinea's second national communication, the agriculture sector is the primary source of GHG emissions in the country.

110. The main activities include:

(a) The intensification of agriculture and livestock production;

(b) The promotion of agroforestry;

(c) The development of sustainable farming;

(d) Building the capacity to undertake improved techniques and the development of positive endogenous technologies.

111. Guinea stated that the implementation of the second proposal would achieve the objective of the New Partnership for Africa's Development of a 6 per cent increase in the share of agriculture in gross domestic product, achieve food security, promote food self-sufficiency and facilitate the export of surpluses.

112. Further, it was communicated that Guinea will require support from the international community to implement its NAMAs.

India

113. India communicated that it will endeavour to reduce the emissions intensity of its GDP by 20–25 per cent by 2020 compared with the 2005 level. It added that emissions from the agriculture sector would not form part of the assessment of its emissions intensity.

114. India stated that the proposed domestic actions are voluntary in nature and will not have a legally binding character. It added that these actions will be implemented in accordance with the provisions of relevant national legislation and policies, as well as the principles and provisions of the Convention, in particular Article 4, paragraph 7. Finally, it added that this information has been communicated in accordance with the provisions of Article 12, paragraphs 1(b) and 4, and Article 10, paragraph 2(a), of the Convention.

Indonesia

115. Indonesia communicated that its voluntary NAMAs will reduce its GHG emissions by 26 per cent by 2020.

116. Indonesia added that this reduction would be achieved through, inter alia:

(a) Sustainable peat land management;

(b) A reduction in the rate of deforestation and land degradation;

(c) The development of carbon sequestration projects in forestry and agriculture;

(d) The promotion of energy efficiency;

(e) The development of alternative and renewable energy sources;

(f) A reduction in solid and liquid waste;

(g) Shifting to low-emission modes of transport.

117. Indonesia also communicated that its national action plan, aimed at achieving the aforementioned emissions reduction, would be equipped with a measurable, reportable and verifiable system in order to ensure that each action receives the necessary level of funding.

Israel

118. Israel communicated that it will strive to achieve the target of a 20 per cent reduction in GHG emissions by 2020 below 'business as usual' levels.

119. It added that this goal would be achieved primarily through the implementation of two government decisions by 2020, one calling for a 10 per cent share of renewable energy in electricity generation and the other calling for a 20 per cent reduction in electricity consumption.

120. Israel also communicated that an inter-ministerial steering committee will prepare a national action plan, which will include, inter alia: the reduction potential of various defined measures; means of implementation; implementation barriers; economic aspects of the long-term plan; and a timetable for its implementation.

121. Israel made a second submission on 13 August 2012, providing the additional information presented below.

122. It communicated that a study conducted in 2009 found that, under a 'business as usual' scenario, Israel's GHG emissions are expected to double between 2005 and 2030. This situation is primarily due to Israel's relatively high growth in population and the continuous increase in the standard of living. The results pointed to a 63 per cent increase in the country's GHG emissions by 2025, stemming largely from an increase in fuel combustion in the energy sector. As the energy sector is the major contributor to Israel's GHG emissions, the study focused mainly on expected developments in that sector.

123. Israel also communicated information on its national circumstances, stating that the relatively low abatement potential in the country is due to: the low feasibility of many abatement measures, such as the absence of heavy industry; the low feasibility of biomass and carbon capture and storage; and land scarcity.

124. Israel stated that the following main actions are budgeted for and expected to be implemented:

(a) The development of a programme for the scrapping of inefficient refrigerators and air conditioners in the household sector, replacing them with energy-efficient models;

(b) The promotion of pilot projects for new and existing green buildings, including a building survey, and an experimental project for retrofitting insulation in existing buildings within the framework of the Government's urban renewal project;

(c) Investment in education and information projects to increase awareness and promote behavioural changes among the public in order to achieve energy efficiency and GHG emission reductions;

(d) Investment in the commercial integration of Israeli technologies aimed at reducing GHG emissions.

125. In addition, Israel provided information on a government-sponsored programme of subsidies to be provided to the industrial, commercial and municipal sectors for GHG emission reduction projects. The programme will provide a total subsidy of up to 10 million new sheqalim (USD 2.5 million) or up to 20 per cent of the total investment to eligible projects that deliver quantified reductions in GHG emissions until at least 2020.

126. An inter-ministerial committee of all relevant ministries, headed by the Director General of the Finance Ministry, was set up to specify the steps required for the implementation of the national action plan.

127. During 2013, procedures for tracking progress in the implementation of the national plan will be established. The monitoring results will be reported to the Government by the Minister of Environmental Protection at the end of each year.

128. Finally, Israel will commission a new cost–benefit analysis to examine the potential for reducing GHG emissions after 2020. It will provide the basis for a long-term strategy for reducing emissions. Further, a national MRV system will be established to track the implementation of the national plan for the reduction of GHG emissions, as well as to track all additional government measures implemented for the reduction of GHG emissions.

Jordan

129. Jordan communicated the following NAMAs that it expects to implement:

(a) In the transport sector:

(i) National Railway Project: begin the design process and undertake a feasibility study;

(ii) Amman–Zarqa Light Rail Project to improve urban transport standards in the greater Amman–Zarqa metropolitan area and to reduce pollution and vehicle emissions by introducing an environmentally friendly transport system;

(iii) Modernize the freight transport fleet operating in Jordan, cease the importation of old trucks and gradually transform the freight transport fleet into a modern, efficient fleet;

(iv) Build and develop the Amman dry port located south of the city on an 80 m new ring road to create a new corridor, with the aim of reducing the congestion of trucks and pollution;

(v) Aqaba port project: move the port south to the border with Saudi Arabia, thus significantly reducing the distance travelled by ships in Jordanian waters and congestion in the city of Aqaba;

(b) Environmental projects:

(i) Energy efficiency programmes;

(ii) The rehabilitation and protection of the green cover and grazing areas in Badia;

(iii) Water harvesting to protect green cover, including oasis and wetland protection;

(iv) Increase the nature reserve area by including new reserves in addition to the existing ones;

(v) Zarqa River Rehabilitation Project;

(vi) Millennium Project: build a new waste management infrastructure in urban centres;

(vii) The government has removed customs and taxes on energy-saving technologies, such as energy-saving lighting fixtures, hybrid cars, etc.;

(c) In the energy sector:

(i) Fuel switch, increase the natural gas supply and distribution, and increase the share of natural gas in the national energy system;

(ii) Renewable Energy Law enacted by the government (wind, solar energy);

(iii) Biogas to become one of the sources for electricity generation in Jordan;

(iv) Upgrading the Jordanian refinery to improve the quality of diesel and to achieve further emission reductions;

(v) Recycling projects to improve solid waste management;

(d) In the waste sector:

(i) Emission reductions from solid waste management projects:

- Aldlail DSWLF, AL-Ekaider DSWLF, AL-Karak DSWLF, Al-Hamra DSWLF, Maddaba DSWLF, Ghabawi, Suwaqqa, Medical and HW;

(ii) Emission reductions from wastewater treatment plants by utilizing local solar and wind energy:

- Aqaba DWWTP, As-Samra DWWTP, Baqa'a DWWTP, Madaba DWWTP, Ramtha DWWTP, Salt DWWTP and Wadi Arab DWWTP;

(e) In the agriculture and forestry sector:

(i) Growing perennial forage in the Badia region;

(ii) Best management practices in irrigated farming fertilization applications;

(iii) Use of CH4 emitted from livestock and chicken production and slaughter houses;

(iv) Controlling forests, stopping deforestation, and expanding forest and tree-covered areas.

130. In addition, Jordan communicated that its Armed Forces and Air Force Environment Strategy and Action Plan, which includes the upgrading of engines and old vehicles and the use of environmental best practices and energy-saving technologies, will also be implemented.

131. Jordan stated that the actions listed above will be implemented subject to the availability of financial support, capacity-building and technology transfer.

Kyrgyzstan

132. Kyrgyzstan communicated that it will reduce emissions by 20 per cent below the "business as usual" scenario provided it receives adequate support.

Madagascar

133. Madagascar communicated the following NAMAs:

(a) In the energy sector:

(i) Draw up and implement an action plan to develop renewable energies such as micro-hydroelectric, wind, PV and biomass plants for decentralized electrification;

(ii) Set up hydroelectric power plants for large towns;

(iii) Undertake actions to obtain savings from wood energy by promoting improved carbonization techniques and by promoting the use of efficient wood energy-saving stoves;

(iv) Promote the use of low-energy light bulbs;

(b) In the forestry sector:

(i) Undertake a large-scale reforestation programme in 22 regions of the country;

(ii) Restore the Torotorofotsy humid zone, an area of approximately 9,000 ha;

(iii) Improve the management of protected areas through the implementation of the organizational and management plan, and biodiversity management activities;

(iv) Develop the national REDD-plus policy and strategy;

(v) Strengthen pilot projects that contribute to the implementation of the REDD-plus national strategy;

(vi) Strengthen technical skills at all levels;

(vii) Develop the legal and institutional framework for implementing REDD-plus;

(viii) Improve knowledge about REDD-plus among the general public and decision makers;

(ix) Improve the funding mechanism for implementing REDD-plus;

(c) In the energy/waste sector:

(i) Recover the household waste (solid and liquid) of large cities for the manufacturing of fertilizers and energy production (biogas, electricity);

(d) In the agriculture sector:

(i) Multiply forage seeds and popularize them in grazing regions;

(ii) Intensify the production of improved agricultural seeds;

(iii) Produce compost and high-quality organic fertilizers in rural areas in the Agricultural Investment Zones;

(e) In the transport sector:

(i) Promote the production and use of biofuels;

(ii) Introduce and develop least-polluting modes of transport: intermediate modes of transport, public transport by rail, improvement of the types of transport, etc.

134. Madagascar stated that it will undertake the NAMAs listed above, which are appropriate to its socio-economic situation and that, as an LDC, it will require financial, technological and capacity-building support to enable it to carry out these actions.

Malawi

135. Malawi communicated that, through the process of preparation of its initial and second national communications and national stakeholder forums, it has identified several mitigation options, as set out below.

136. With regard to agriculture, Malawi communicated that nationally appropriate mitigation options will constitute actions that will contribute to emission reductions while promoting economic development and taking into account the overriding need to ensure food security and sustainable livelihoods. The following actions are expected to be implemented:

(a) The quantification of GHG emission levels under different farming management practices, with a view to enhancing the development of national carbon accounting;

(b) Changes in agricultural practices and systems, including integrated pest management, crop rotation, conservation agriculture, post-harvest handling and storage, water harvesting, watershed management, soil and water conservation, and irrigation;

(c) The enhancement of participatory research and technology development in relation to the production and management of crops, livestock and fisheries and land and water management;

(d) The development of agricultural advisory services and information systems focusing on participatory extension approaches;

(e) The strengthening of local and farmers' institutions and organizations;

(f) The promotion of microfinance schemes, including ensuring functioning financial markets and institutions;

(g) Increased focus on risk sharing and risk reduction across the entire value chain;

(h) The development/enhancement of climate information systems and early warning mechanisms;

(i) The review and harmonization of the existing policies and regulations that deal with climate change related impacts;

(j) The mainstreaming of win-win adaptation and mitigation strategies and actions through appropriate incentives;

(k) Building the capacity to develop, implement and monitor agricultural NAMAs;

(l) The scaling up of best practices that enhance climate change adaptation and mitigation.

137. With regard to waste management, the following actions are planned:

(a) The construction of controlled landfills and capacity-building for the operation of the landfills;

(b) The processing of solid and liquid municipal and agricultural waste into energy and organic fertilizer;

(c) Reducing the generation of waste;

(d) Composting;

(e) Mechanical-biological treatment;

(f) The disposal of waste in sanitary landfills.

138. With regard to energy, the following actions are planned:

(a) The promotion of renewable energy technologies;

(b) The construction of biogas digesters;

(c) The use of efficient lighting technologies;

(d) The use of efficient firewood cooking stoves;

(e) Increasing efficiency in relation to the capacity and energy balances of the Electricity Supply Corporation of Malawi;

(f) Increasing the ethanol-to-petrol blending ratio;

(g) Switching from paraffin (kerosene) lamps to photovoltaic lamps.

139. With regard to LULUCF, the following actions are planned:

(a) Expanding the stands of trees and the pool of carbon in wood products;

(b) Maintaining the existing stands of trees and the proportion of forest products currently in use.

140. With regard to industrial processes, the following actions are planned:

(a) The development of environmental standards;

(b) The voluntary engagement of programme regulators with firms so as to share and disseminate information and expertise interactively;

(c) The use of market-based instruments, such as the administration of taxes, tariffs and subsidies;

(d) Transparent reporting by firms of the pollutants discharged from their processes;

(e) Information, education and public-awareness campaigns on the risks of pollutants for human health and the environment;

(f) The use of carbon capture and storage;

(g) The use of technologies that blend cement with rice husks;

(h) The promotion of industries that use CO2 as a raw material;

(i) The promotion of industries that add value to lime via the Solvay process.

141. Finally, Malawi communicated that international support will be needed in the form of finance, technology and capacity-building to implement the NAMAs listed above.

Maldives

142. Maldives communicated that it aims to achieve carbon neutrality by 2020.

143. The Party also stated that the Maldivian Government is undertaking detailed work on the implementation of this action and will register a request for technological, financial and capacity-building support to facilitate the implementation of this action. It expressed the willingness for this request to be recorded in the registry and for its mitigation actions to be internationally measured, reported and verified. It added that the submission of this mitigation action is, however, voluntary and unconditional.

144. Maldives also stated that submissions pursuant to paragraphs 4 and 5 of the Copenhagen Accord should be made available for consideration by the AWG-LCA and the AWG-KP, and should be taken into account in the context of the evolving work programmes of these two ad hoc working groups. The Party added that, going forward, the UNFCCC secretariat should ensure that the communications envisaged are reflected as information (INF) documents of both the COP and the CMP, as well as their respective subsidiary bodies and ad hoc working groups.

Marshall Islands

145. The Marshall Islands communicated that it aims to achieve a 40 per cent reduction in CO_2 emissions below 2009 levels by 2020, pursuant to the 2009 National Energy Policy and Energy Action Plan.

146. It also stated that the implementation of its NAMAs will be subject to the provision of adequate international support.

147. The Marshall Islands also stated that is willing to be associated with the Copenhagen Accord, on the understanding that the political progress achieved therein will be translated into an internationally legally binding instrument or instruments under the Convention, to be adopted by the COP in 2010. It continued that such instrument(s) must contain internationally legally binding commitments and actions sufficient to safeguard the livelihoods and ensure the survival of those countries most vulnerable to the adverse effects of climate change, including the Marshall Islands.

Mauritania

148. Mauritania communicated the following NAMAs:

(a) Increase forest cover from 3.2 per cent in 2009 to 9 per cent in 2050 through reforestation:

(i) Create pits for the sequestration of GHGs;

(ii) Improve the availability of forestry resources;

(b) Energy efficiency in rural and urban environments;

(c) Reduction of energy consumption:

(i) Promote public transport;

(ii) Use butane gas as a substitute for ligneous products;

(iii) Replace the use of incandescent light bulbs by energy-efficient light bulbs;

(d) Conservation of traditional energies in Mauritania:

(i) Make rational use of traditional energy sources (biomass);

(ii) Use improved stoves;

(iii) Improve the yields from wood carbonization for the manufacture of charcoal;

(e) Promotion of renewable energies in Mauritania:

(i) Develop the solar and wind power production project (more than 800 MW by 2020);

(ii) Promote biogas techniques;

(iii) Focus research on efficient renewable energy production techniques and their use.

149. Mauritania also stated that it notes with interest the advances made through the Copenhagen Accord with regard to the goal of a 2 °C threshold, with particular attention to be paid to adaptation, as well as the notable advances made in terms of the financial resources to be mobilized in the short and medium term. It expressed the hope that the Copenhagen Accord would evolve into a legally binding instrument and lead to a conclusion of the work of the AWG-LCA and the AWG-KP.

Mauritius

150. Mauritius communicated that it has already embarked on a comprehensive Sustainable Development Programme as part of the "Maurice Ile Durable" initiative, which prioritizes renewable energy and energy efficiency.

151. Mauritius added that it intends to enhance mitigation efforts subject to the financial, technological and capacity-building support provided.

Mexico

152. Mexico communicated that it aims to reduce its GHG emissions by up to 30 per cent compared with the 'business as usual' scenario by 2020. It added that the full implementation of its Special Climate Change Programme, adopted in 2009, which includes a set of NAMAs to be undertaken in all relevant sectors, would achieve a reduction in total annual emissions of 51 Mt CO_2 eq by 2012, compared with the 'business as usual' scenario.

153. Mexico also stated that the achievement of its aforementioned target would be subject to the provision of adequate financial and technological support from developed countries as part of a global agreement.

Mongolia

Energy supply: increasing renewable options

PV and solar heating

154. Mongolia is located in a region with abundant sunshine, and typically receives between 2,250 and 3,300 hours/year. PV systems have been shown to be the less expensive option compared with small gasoline generators. At present, small-scale PV systems (10–1,000 W) are used in remote areas. It has been assessed that PV power systems are competitive with conventional energy sources for small-power applications for nomadic families and communities in Mongolia.

155. The installation of large-scale PV systems in the Gobi region of Mongolia may contribute both to protecting against air pollution and to supporting regional development. It will be necessary to implement pilot research projects in the areas situated along the railway network and to consider PV systems in the Mongolian Gobi desert and steppe areas in the future.

Wind power generators and wind farms

156. As in the case of solar energy, there is potential to supply nomadic herders and farmers in rural areas with small, portable wind generation systems. Renewable energy development is included in the Government Action Programme and will serve as the principal way to provide electricity to remote areas and nomadic families. Turbine generators (with a total capacity of 100–150 kW) could be placed in provincial centres in the southern part of Mongolia. The most promising sites should be prioritized according to the technical and economic feasibility of operating wind turbine generators with a total capacity of 100–150 kW in parallel with existing diesel generators.

157. In addition, large-scale wind farm projects could be implemented in Mongolia. The Party already has the experience of establishing a wind farm with a total capacity of 50 MW in Mongolia.

Hydropower plants

158. Hydropower development is one of the best options for electricity supply in remote areas and for consumers with limited demands. A number of promising hydropower sites have been identified in Mongolia. Currently, the Taishir (11 MW) and Durgun (12 MW) hydropower plants are in operation, and more than 20 hydropower sites have been identified, with capacities ranging from 5 MW to 110 MW. The development of these plants is moderately feasible in Mongolia. The Government of Mongolia encourages the use of small- and medium-sized hydroelectric developments. The emissions reduction potential of this option is high, and its local benefits are expected to outweigh the negative impacts.

159. The Taishir and Durgun hydropower plants were registered as CDM projects with CERs of 29,600 and 30,000 t CO_2/year, respectively. The 220 MW Egiin gol Hydroelectric Power Generation Project, with potential CERs of 192,500 t/year, is in the project development stage.

Energy supply: improving coal quality

Coal beneficiation

160. Mongolia has substantial coal reserves. Coal will continue in the future to be the most economic fuel for power and heat generation in the central energy system and for heat generation in provincial centres. Currently, no provision exists for coal preparation at mining sites and, as a result, there is no quality control in the supply system. Coal quality often does not meet the minimum standard requirements, and in many cases emergency situations at the power stations are caused by the low quality of the coal.

161. Coal washing can be introduced at the biggest coal mines in Mongolia, such as Baganuur, Shivee-Ovoo and Tavantolgoi. This option is technically feasible; there are low institutional barriers. This option is already included in the Mongolian Environmental Action Plan.

Coal briquetting

162. Coal is one of the most significant sources of environmental pollution, especially air pollution. Therefore, to introduce the coal briquetting technology may well be an efficient way to mitigate GHG emissions and reduce air pollution. Some studies and investigations on conventional formed coal briquettes have been carried out by several Mongolian organizations. However, the quality of the coal briquettes does not meet the required standards.

163. A feasibility study on the production of conventional coal briquettes carried out by the Mining Institute of Mongolia with the support of the United Nations Development Programme shows that the production cost was estimated at 14,000 togrogs/t (i.e. USD 13.5/t).

164. According to estimates by the Hashimoto Sangyo Company of Japan in Mongolia, the initial capital cost for a small-scale (5,000–6,000 t/year) coal briquetting plant amounts to approximately USD 9.6 million. Compared with other technologies (e.g. liquefaction and gasification) for the production of clean fuel from coal, the coal briquetting technology has several advantages, such as lower investment and lower life cycle costs.

Energy supply: improving the efficiency of heating boilers

Improve the efficiency of existing heating boilers and install new, highly energy-efficient ones

165. One of the features of the Mongolian climate is the long winter season with extremely cold temperatures, which typically drop to between –30 °C and –40 °C. Heating is therefore an essential requirement for sustaining life. Typically, small heating boilers in provincial centres use between 800 and 1,200 t of coal/year on average in order to produce 0.8–1.2 MW of power and heating.

166. These boilers provide heating for schools, hospitals, kindergarten, and other public institutions with very low efficiency (0.4–0.5 MW) due to outdated equipment. The use of 12 efficient boilers with a capacity of 25 MW would produce a CO_2 emissions reduction of 91,000 t/year. The installation of 260 new boilers with a capacity of 1 MW would reduce CO_2 emissions by 340,000 t/year.

Convert hot water boilers into small-capacity thermal power plants

167. This option would convert hot water boilers into thermal power plants with a capacity of 5–10 MW. This would provide the heating and power supply for provincial centres and nearby provincial areas. Converting steam boilers into small-capacity thermal power plants (5 × 10 MW) would reduce CO_2 emissions by 190,000 t/year.

Energy supply: improving household stoves and furnaces

Change the fuels used for household stoves and furnaces

168. Household stoves in cities have poor energy efficiency, pollute the environment and threaten human health due to insufficient fuel burning. One of the potential options to reduce environmental pollution and GHG emissions is to exchange the raw coal used in stoves with LPG and coal briquettes.

Modernize the existing design and implement the new design for household stoves and furnaces

169. The modernization of 250,000 household stoves and furnaces would reduce CO_2 emissions by 920,000 t/year.

Energy supply: improving combined heat and power (CHP) plants

Improve efficiency and reduce internal use

170. At present, six CHP plants are operating in Mongolia with a total installed electrical capacity of 824 MW, a steam production capacity of 7,100 t/h and an annual load factor of 71.4 per cent. The plants' own use for electricity is 22.3 per cent, and for heat production is around 15 per cent. Total CO_2 emissions from the CHP sector amounted to 6,372 Gg. Therefore, the CHP plants are one of the main contributors to total national GHG emissions. In particular, energy efficiency improvements, including the reduction of own use, should be seriously considered for GHG mitigation.

171. The implementation of these actions would produce CO_2 reductions of 185,000 t/year.

Energy supply: increasing the use of electricity for local heating in cities

Use of electricity from the grid for individual households in cities

172. The main purpose of this option is to reduce air pollution and GHG emissions in Ulaanbaatar city. The Government of Mongolia is aware of the need to reduce air pollution in Ulaanbaatar and is investigating many alternative options, including the use of electricity for heating in "ger" (traditional tent houses) districts. However, no detailed research has yet been undertaken and no projects have yet been implemented.

In the construction sector: energy efficiency improvements in buildings

Improve the district heating system in buildings

173. Energy loss is high in the heat distribution systems of Mongolia. Urgent actions are required to reduce this loss by minimizing leaks and replacing valves and compensators. In addition, residential consumers need to save energy by regulating room temperature.

Install heat and hot water meters in apartments

174. In Mongolia, about 30 per cent of the population lives in apartment complexes which are connected to the central heat supply network. Many apartments do not have heat meters and their heating fee and price is calculated based on a fixed tariff that does not reflect the actual amount of heat used.

Carry out insulation improvements to existing buildings and implement new energy-efficient standards for new buildings

175. A national study on heat loss concluded that nearly 40 per cent of the heat supply for houses and buildings is lost. The heat loss occurs through windows, walls and doors. Current standards are lower by two to three times; this shows that most houses have a higher than average rate of heat loss.

Improve the lighting efficiency in buildings

176. This demand-side management option concerns the use of energy-efficient compact fluorescent lamps to replace inefficient incandescent light bulbs. The lighting demand of households and service sectors accounted for 380 GWh and is expected to increase in the

future. Currently, most households and about 30 per cent of service and commercial buildings use incandescent light bulbs, while the rest use compact fluorescent lamps.

In the industry sector: energy efficiency improvements in industry

Improve housekeeping practices

177. Mongolian industries have great potential to save energy through energy-use management. The energy-saving potential in industries can be divided into "easy" savings (no- and low-cost), medium-cost savings and long-term possibilities. The energy-saving potential through "easy" savings (good housekeeping and energy management) is 15–25 per cent, with a pay-back period of less than one year.

178. The implementation of this option could lead to a CO_2 emissions reduction of about 300,000 t/year.

Implement motor efficiency improvements

179. Mongolia relies heavily on motor systems to power the operations of the industrial sector. Motor systems consume about 70 per cent of industrial electricity in Mongolia. These motor systems are often less efficient than those in industrialized countries. Motor efficiency improvement technology includes: energy-efficient motors; variable speed drives; improved operation and maintenance; the correction of previous oversizing; improved mechanical power transmission; and the efficiency of driven equipment. It is estimated that the electricity-saving potential equates to 20 per cent of total electricity consumption by industrial motors.

180. The implementation of this option could lead to a CO_2 emissions reduction of about 240,000 t/year.

Introducing dry processing in the cement industry

181. Changing the wet processing of cement to dry processing would save a large amount of energy. Feasibility studies show that 25 per cent of all industrial coal is used for cement production. The wet processing of cement requires 1,500 to 1,700 kcal/kg.cl of heating, whereas dry processing requires between 1,000 and 1,200 kcal/kg.cl. This shows that the energy-saving potential of coal consumption in the cement sector is about 40 per cent. The reduction in CO_2 emissions from the implementation of this option would be about 147,000 t/year.

In the transport sector

Use of more fuel-efficient vehicles

182. A total of 200,288 vehicles were registered in Mongolia in 2007, which represents a significant increase of 1.9 times the number of registered vehicles in 2000. This rapid growth in traffic and in the transport load has intensified the negative impacts on public health and environmental pollution. To promote the import of fuel-efficient vehicles, economic measures, such as the implementation of used vehicle import standards and a vehicle registration tax, could be implemented in order to improve the overall fuel efficiency of vehicles.

In the agriculture sector

183. Limit the increase in the total number of livestock by increasing the productivity of each type of animal, especially cattle.

In the forestry sector

Improve forest management

184. Mongolian forests provide a multitude of services with regard to climate change and other environmental problems, including serving as carbon sinks, sources of renewable energy, watershed protection and soil erosion protection. Many of these services have been lost, or will be lost, due to the extreme pressure exerted on Mongolia's forest resources.

185. The following major mitigation options have been identified for the forestry sector:

(a) Natural regeneration;

(b) Forestry plantation;

(c) Agroforestry;

(d) Shelter belts;

(e) Bioelectricity.

Reduce emissions from deforestation and forest degradation, improve the sustainable management of forests and enhance forest carbon stocks in the Mongolian forestry sector

186. There is some potential for GHG emission reductions from deforestation and forest degradation in Mongolia. It would therefore be possible to initiate and implement a REDD project in Mongolia through reforestation activities by implementing community-based forest management improvements and the sustainable use of forest resources.

Morocco

187. Morocco communicated the following NAMAs:

(a) In the energy sector:

(i) The installation of mini-hydroelectric plants with a 3 MW capacity per unit and a total of 300 MW (launched in 2009) – the installation of 100 plants between now and 2030. Mitigation potential: 715 kt CO_2/year;

(ii) The installation of hydroelectric plants with a total capacity of 40 MW (Tanafnit El Borj) – to be launched in 2009 and to become operational in 2013. Mitigation potential: 171 kt CO_2/year;

(iii) The development of 2,000 MW of solar energy on five sites (commissioning from 2015–2020). Mitigation potential: 3,700 kt CO_2/year;

(iv) The promotion of solar water heating: 40,000 m^2/year, 440,999 m^2 of hot water from solar energy in 2012, 1.7 million m^2 in 2020. Mitigation potential: 232 kt CO_2/year;

(v) The development of a 5,000 MW wind farm installed base (Energipro programme): 1,000 MW in 2012 and 5,000 MW by 2030. Mitigation potential: 9,250 kt CO_2/year;

(vi) The installation of a 870 MW combined cycle power plant (Ain Beni Mathar, commissioning in 2010). Mitigation potential: 4,038 kt CO_2/year;

(vii) The improvement of electricity generation plant efficiency through the optimization of a maintenance plan. Mitigation potential: under evaluation;

(viii) The use of clean coal technologies for the Jorf Lasfar and Safi plants. Mitigation potential: under evaluation;

(ix) Project for the importation of natural gas;

(x) Goal of a 20 per cent share of natural gas in total national consumption by 2020. Mitigation potential: 6,421 kt CO_2/year;

(xi) Two 1,000 MW nuclear power projects planned for 2020–2030. Mitigation potential: 14,968 kt CO_2/year;

(xii) The optimization of public lighting (launched in 2009). Mitigation potential: under evaluation;

(xiii) Awareness-raising campaigns for energy saving and lower energy consumption equipment (launched in 2009). Mitigation potential: under evaluation;

(xiv) The distribution of 22.7 million low-energy light bulbs for households and the tertiary sector by 2012. Mitigation potential: 490 kt CO_2/year;

(xv) Energy-saving labelling of domestic appliances (especially refrigerators and air conditioners) (to be launched). Mitigation potential: 779 kt CO_2/year;

(xvi) The improvement of power metering and billing systems (to be launched). Mitigation potential: under evaluation;

(xvii) The obligation for energy sellers to make energy savings, by issuing energy certificates (to be launched). Mitigation potential: under evaluation;

(b) In the transport sector:

(i) The strengthening of the technical control of road transport through the use of Technical Drop-in Centres (implementation period: 2008 to 2012). Mitigation potential: 54 kt CO_2/year;

(ii) The renewal of the existing fleet of road transport vehicles for goods and taxis, based on a new vehicle credit scheme (implementation period: 2008 to 2012). Mitigation potential: 501 kt CO_2/year;

(iii) The promotion and development of rail transport through the construction of the Tangier–Casablanca very fast train line and the electrification of the Fes–Oujda railway line. Mitigation potential: under evaluation;

(iv) Urban trat. portation development projects: the Casablanca Regional Express Network (implementation period: 2009 to 2014). Mitigation potential: 800 kt CO2/year;

(v) The commissioning of the Rabat Tramway in 2010. Mitigation potential: 119 kt CO_2/year;

(vi) The implementation of the urban and suburban travel plans, ensuring coherence with local community infrastructure. Mitigation potential: under evaluation;

(c) In the industrial sector:

(i) Office Cherifien des Phosphates (national Moroccan phosphate company): setting up an energy recovery system over four of its sites. Mitigation potential: 343 kt CO_2/year;

(ii) Ciments du Maroc (Moroccan cement company): the installation of a wind farm with a total capacity of 20 MW. Mitigation potential: 55 kt CO2/year;

(iii) The installation of a wind farm with a total capacity of 20 MW at the Regional Agricultural Enhancement Agency (Offices Regionaux de Mise en Valeur Agricole);

(iv) The development of energy efficiency in industry through partnerships with the Centre for Development of Renewable Resources (launched in 2009). Mitigation potential: 581 kt CO_2/year;

(v) Office Cherifien des Phosphates: phosphate pipeline between Khouribga and the ports of Safi and Jorf Lasfar (work to begin in 2012). Mitigation potential: 974 kt CO_2/year;

(vi) Laforge Maroc: the installation of a wind farm with a total capacity of 10 MW, to be extended to 32 MW (implementation period: 2010 to 2012). Mitigation potential: 88 kt CO_2/year;

(d) In the waste sector:

(i) The upgrading of non-controlled landfill dumps and the recovery of CH4 from these landfill dumps, in line with the National Household Waste Plan (implementation period: 2008 to 2023). Mitigation potential: 284 kt CO_2/year;

(ii) The recovery of CH_4 from controlled landfill dumps, in line with the National Household Waste Plan (implementation period: 2008 to 2023). Mitigation potential: 3,507 kt CO_2/year;

(iii) The recovery of GHGs from wastewater treatment plants, in line with the National Plan on Liquid Waste Sanitation (implementation period: 2008 to 2009), and the treatment of 80–90 per cent of wastewater, by 2020 and 2030, respectively. Mitigation potential: 336 kt CO_2 year;

(e) In the agriculture sector:

(i) The improvement of the farm land yield. Mitigation potential: 2,025 kt CO_2/year;

(f) In the forestry sector:

(i) Reforestation: reforestation according to the National Reforestation Plan adopted in 1994, which carries out reforestation of 50,000 ha/year until 2013, and which will reforest 1 million ha by around 2030. Mitigation potential: 209 kt CO_2/year;

(ii) The protection of forest from fire by implementing a permanent Fire Prevention and Fire-fighting Plan, adopted in 2003. Mitigation potential: under evaluation;

(g) Actions related to housing:

(i) Design new towns and new urbanization areas, based on the principles of energy consumption optimization and limiting urban sprawl;

(ii) Carrying out a new housing programme in rural areas with the aim of building ecological rural villages based on energy efficiency and renewable energies;

(iii) Incentives for setting up "green plans" and "plans for ecologically valuable areas" for the protection and enhancement of urban spaces;

(iv) Guidelines for the State-run real estate group Al Omane to carry out "green spaces" programmes and energy-saving measures for buildings and public lighting;

(v) A programme for the construction of a carbon-neutral building to house administrative offices;

(vi) A programme to design and build eco-friendly neighbourhoods;

(vii) A programme for the design and construction of low-energy consumption houses for rural areas;

(viii) "Green spaces" programme for towns.

Papua New Guinea

188. Papua New Guinea communicated that it is aiming to decrease its GHG emissions by at least 50 per cent before 2030, while becoming carbon-neutral before 2050.

189. Papua New Guinea provided the following conditions for the communication of its intention to achieve the aforementioned emissions reduction.

190. Preliminary nature of inscription: any actions inscribed hereto by Papua New Guinea are preliminary in nature, are indicative only of aspirational objectives and are subject to paragraphs 133–137 below.

191. Interim nature of the Copenhagen Accord: Papua New Guinea views the Copenhagen Accord as an interim "stepping stone" agreement designed to facilitate immediate action while supporting the development of a legally binding international treaty on climate change through the ongoing work of the AWG-LCA and the AWG-KP. However, Papua New Guinea believes that the lack of finalized rules of procedure under the two-track negotiation process impedes progress and erodes ambition. Therefore, an urgent review must be undertaken by the Parties.

192. Need for a legally binding treaty: the Party believes that global development and climate objectives are best realized through a legally binding and broadly inclusive international treaty framework that includes, inter alia: science-based global emission reduction targets, leadership by all developed countries related to deep domestic emission cuts and the provision of international support; NAMAs implemented by developing countries subject to their respective capabilities and the provision of adequate, predictable and sustainable international support (finance, capacity-building and technology); appropriate investments to support adaptation measures in developing countries; an effective system for measuring, monitoring, reporting and verification; and a robust compliance regime, etc.

193. Delivery on pledges and potential: Papua New Guinea's support for the Copenhagen Accord is subject to the immediate mobilization and verification of the pledged USD 30 billion in financial resources from 2010 to 2012 and the rapid establishment of mechanism and governance systems to facilitate its effective implementation and distribution. Further, the Copenhagen Accord must deliver on its promise and potential, including: expanded commitments, actions and sources for emission reductions; an aggregate commitment leading to a peaking of emissions by 2020; the establishment of the Copenhagen Green Climate Fund; a coordinated increase in the funding commitment, building towards total funds of USD 100 billion or more by 2020; a refocus on effective implementation related to Africa, the LDCs, the small island developing States (SIDS) and forests (REDD-plus); and the transition to a framework that facilities a low-carbon economic transition at the national level.

194. Enabling climate-compatible development: Papua New Guinea intends to finalize an initial Climate-compatible Development Plan designed to promote economic and social development in a manner that eradicates poverty, subject to Article 4, paragraphs 3 and 7, of the Convention and paragraph 2 of the Copenhagen Accord. Further, Papua New Guinea recognizes that NAMAs will be undertaken on the basis of its respective capability and will be further enabled by international support (financial, capacity-building and technological) that is new and additional, predictable and adequate, including voluntary actions by LDCs and SIDS taken on the basis of support as stipulated in paragraph 5 of the Copenhagen Accord. However, neither the Copenhagen Accord nor the draft AWG-LCA text adequately support frameworks for the delivery of finance based on country-led national climate-compatible development plans, thereby necessitating further review, consideration and guidance by the Parties.

195. Periodic review and update: subject to ongoing national planning processes, Papua New Guinea expects to periodically update relevant sustainable development objectives, 'business as usual' projections, NAMAs, adaptation investments and the resulting requirements for enabling resource mobilization.

196. Papua New Guinea also provided the following rationale for its support of the Copenhagen Accord.

197. Commitments and actions covering 80 per cent of global emissions: for the first time, total commitments made by countries, including key sectors such as REDD-plus, represent almost 80 per cent of global emissions. Conversely, less than 25 per cent of global GHG emissions are now represented by signatories to Annex B to the Kyoto Protocol (11 Gt of 46 Gt in 2005).

198. Potential for global emissions to peak by 2020: if the commitments pledged under the Copenhagen Accord are implemented to their maximum potential domestically in both developed and developing countries, these actions could lead to global emissions peaking by 2020. Conversely, under the Kyoto Protocol, this would be impossible due to technically unfeasible domestic reductions and/or financially unsustainable purchases of CDM offset credits.

199. Commitment to limit global temperature rise: the Copenhagen Accord expresses a collective commitment to limit the increase in global temperature below 2 °C while agreeing to consider by 2015 the strengthening of long-term goals to limit the temperature rise below 1.5 °C. However, this will require participating Parties to perform at the maximum range or exceed existing commitments. Conversely, the Kyoto Protocol cannot achieve a 2 °C limit, let alone a 1.5 °C limit, and will result in a 'business as usual' global temperature increase of 4 °C.

200. Focus on the most vulnerable: the Copenhagen Accord places appropriate emphasis on the developing countries that are most vulnerable and least able to adapt to the impacts of climate change from the dual metrics of adverse consequences and required economic transitions. Conversely, the Kyoto Protocol has channelled less than 5 per cent of CDM resources (number of projects and pipeline credits) to those most vulnerable and least able to adapt, such as the LDCs, SIDS and Africa.

201. Facilitating economic transformation: the Copenhagen Accord correctly approaches climate change from the perspective of economic transformation for developing countries, facilitated through incentives to develop along low emission pathways (paragraph 7 of the Copenhagen Accord) within the context of sustainable development. Similar policy advances must be incorporated within the outcomes of the AWG-LCA. Conversely, the Kyoto Protocol only incentivizes project-oriented and programmatic activities which are insufficient to fulfil the ultimate objectives of the Convention.

202. Increased funding to enable developing country mitigation: the Copenhagen Accord pledges approximately USD 30 billion from 2010 to 2012 or USD 10 billion per year, with a significant proportion to enable mitigation actions in developing countries. Conversely, the Kyoto Protocol, under the primary CDM market, generated USD 6.5 billion in 2008. Therefore, the addition of the Copenhagen Accord, together with the ongoing CDM market, may provide significant and additional emission reductions in developing countries.

203. Increased funding for adaptation: the Copenhagen Accord pledges approximately USD 30 billion from 2010 to 2012, or USD 10 billion per year; several billion of this total could potentially be used for adaptation actions in developing countries. Conversely, the Kyoto Protocol, under the Adaptation Fund linked to the CDM, currently has at its disposal 7.5 million CERs (CDM credits), worth around USD 125 million.

204. Legal mandate: the Copenhagen Accord operates under Article 7, paragraph 2(e), of the Convention and Papua New Guinea hereby requests the COP to facilitate the coordination of measures adopted by those Parties inscribing actions to address climate change and its effects, taking into account their differing circumstances, responsibilities and capabilities, and respective commitments.

Peru

205. Peru communicated the following NAMAs:

(a) The reduction to zero of the net deforestation of primary or natural forests;

(b) The modification of the current energy grid, so that renewable energy (non-conventional energy, hydropower and biofuels) represent at least 33 per cent of the total energy use by 2020;

(c) The design and implementation of measures which allow the reduction of emissions caused by the inappropriate management of solid waste.

206. Peru expressed the firm willingness of its Government to strengthen the collective action to mitigation climate change through the development of a sustainable and low-carbon economy. It also stated that its mitigation actions listed above are voluntary in nature and are guided by the principles and provisions of the Convention, especially Article 4, paragraphs 1 and 7, Article 12, paragraphs 1(b) and 4, and Article 10, paragraph 2(a).

207. Peru also stated that its mitigation measures do not exclude the use of the CDM or other market-based mechanisms which could be created under the Convention. It added that for the development and implementation of its mitigation actions it requires support from the international community through the range of financial and cooperative mechanisms available.

208. Peru made a second submission to the secretariat on 25 July 2011, providing additional information.

209. On 9 July 2011, the Government approved a national plan of environmental action for 2010–2021, which established goals and actions incorporating the following commitments to achieve a national low-carbon economy:

(a) Reducing net emissions from the LULUCF sector through the conservation of 208,500 square miles of primary forests as part of its National Programme of Forest Conservation. This programme, combined with additional actions, will allow Peru to achieve an emission reduction of 45 per cent compared with the emission level in 2000, with potential avoided emissions of up to 50 Mt CO2 eq;

(b) Using non-conventional renewable energies and hydropower to provide at least 40 per cent of the total energy mix. Together with energy efficiency, this initiative will result in a total emission reduction of 28 per cent compared with the emission level in 2000, with potential avoided emissions of up to 7 Mt CO2 eq;

(c) Capturing and using CH4 from urban solid waste: a national programme to build landfills in 31 large and medium-sized cities, with the potential to achieve an emission reduction of 7 Mt CO2 eq.

210. Peru reiterated that it will require support from the international community through the financial and cooperation mechanisms established by the COP to implement the above-mentioned actions.

Republic of Korea

211. The Republic of Korea communicated that it aims to reduce its national GHG emissions by 30 per cent from the 'business as usual' emissions in 2020.

Republic of Moldova

212. The Republic of Moldova communicated that it would reduce its total national GHG emissions by no less than 25 per cent compared with the base year (1990) level by 2020 through the implementation of global economic mechanisms focused on climate change mitigation, in accordance with the principles and provisions of the Convention.

San Marino

213. San Marino communicated the following NAMAs:

(a) The promotion and development of energy production from renewable energy sources;

(b) The reduction of emissions of gases that contribute to climate change;

(c) The rationalization and modernization of infrastructure, energy, transport and supply networks, and the relevant plants, in relation to the national territory and environment;

(d) The reduction of final energy consumption in the transport, production, housing and tertiary sectors, the services supplied being equal, through energy saving and rational use, as well as information campaigns to encourage the implementation of these measures;

(e) Direct measures, such as interventions for energy saving and the use of renewable energy sources.

Sierra Leone

214. Sierra Leone communicated that, in a bid to make a significant contribution towards the reduction of the sources and potential sources of GHG emissions and to the enhancement of carbon sinks, it would undertake the NAMAs listed below:

(a) The establishment of the National Secretariat for Climate Change;

(b) Institutional strengthening and capacity-building for environmental protection and management as well as the country's mitigation and adaptation efforts regarding climate change. It aims to increase conservation efforts through:

- The establishment of a network of 12 protected areas by 2015;
- The sustainable management and protection of forest reserves and catchment areas, including mangroves, and coastal and inland wetlands;
- The delineation and restoration of vulnerable habitats and ecosystems in the west of Sierra Leone;
- The provision of support for a national assessment of forest resources;

(c) The improvement of forest governance to maintain the proportion of land area covered by forests to at least 3.4 million ha by 2015, through the development of legislation, regulations and by-laws for environmental protection, including the control of deforestation, firewood collection and charcoal production, and through capacity-building, training and support for law enforcement services and the Ministry of Agriculture (Forestry Department);

(d) The setting/development of air, water and soil quality standards, and ensuring regular assessments and monitoring through control programmes;

(e) The introduction of conservation farming and the promotion of the use of other sustainable agricultural practices (e.g. agroforestry);

(f) The development of an Integrated Natural Resources and Environmental Management Programme, including sustainable land management programmes, particularly in relation to ecosystems;

(g) The expansion of clean energy utilization (e.g. solar, mini-hydroelectric power, LPG, biomass stoves);

(h) The development of energy efficiency programmes through sensitization and awareness-raising campaigns. The sustainable production of charcoal and the reduction of dependence on firewood;

(i) The development of alternative energy sources, such as biofuels from sugarcane, corn, rice husks, etc.;

(j) The development of agricultural and urban waste incineration programmes for energy production;

(k) Improved waste management through the composting and recycling of waste;

(l) The development and enforcement of regulations on the regular maintenance of vehicles. Improving the use of mass transport (e.g. road and water) for passengers and cargo in order to reduce traffic congestion and GHG emissions.

Singapore

215. Singapore communicated that the implementation of its NAMAs would lead to a reduction in GHG emissions of 16 per cent below 'business as usual' levels in 2020, contingent on a legally binding global agreement in which all countries implement their commitments in good faith. Although a legally binding agreement has yet to be achieved, Singapore will nonetheless begin to implement the mitigation and energy efficiency measures announced under the Sustainable Singapore Blueprint in April 2009. These measures are an integral part of the measures to achieve a 16 per cent reduction below 'business as usual' levels. When a legally binding global agreement on climate change is reached, Singapore will implement additional measures to achieve the full 16 per cent reduction below 'business as usual' levels in 2020.

South Africa

216. South Africa communicated that it will implement NAMAs to enable a 34 per cent deviation below the 'business as usual' emissions growth trajectory by 2020 and a 42 per cent deviation below the 'business as usual' emissions growth trajectory by 2025.

217. South Africa stated that the above information is communicated in accordance with the provisions of Article 12, paragraphs 1(b) and 4, of the Convention, and pursuant to the provisions of Article 4, paragraph 1, of the Convention. The Party added that the mitigation actions referred to above will be undertaken in accordance with Article 4, paragraph 7, of the Convention; the extent to which this action will be implemented will depend on the provision of financial resources, the transfer of technology and the capacity-building support provided by developed countries. It also added that "therefore, the above action requires the finalization of an ambitious, fair, effective and binding multilateral agreement under the UNFCCC and its Kyoto Protocol at COP 16 and CMP 6 in Mexico to enable the delivery of this support". Finally, it stated that with financial, technological and capacity-building support from the international community, these NAMAs will enable South Africa's GHG emissions to peak between 2020 and 2025, plateau for approximately a decade, and decline in absolute terms thereafter.

Swaziland

218. Swaziland communicated a NAMA in the agriculture sector and stated that, as agriculture accounts for significant levels of emissions in Swaziland, the NAMA has been

prepared with a view to reducing GHG emissions, taking into account the national circumstances of the country and the overriding need to ensure food and nutrition security and sustainable livelihoods. The time frame for the implementation of the NAMA is expected to be from 2014 to 2020.

219. Firstly, Swaziland communicated the following elements of its agricultural NAMA:

(a) Changes in agricultural systems, including agroforestry and afforestation; protected cultivation; mixed farming; integrated farming; precision agriculture; organic farming; and conservation agriculture;

(b) Changes in agricultural practices, including changing planting dates; introducing adaptable varieties/breeds and diversification; adopting sustainable land management techniques and approaches; supplementary livestock feeds; integrated pest management; production of healthy seeds and planting material; post-harvest handling and storage; soil health and fertility management; and correct plant populations and crop rotations;

(c) Changes in agricultural water management, including water harvesting; reuse and recycling; on-farm irrigation, where appropriate; soil and water conservation; watershed management; agricultural diversification; promoting improved crop varieties, livestock breeds and fish fingerlings; increasing the value of sustainable agricultural practices through the valuation of carbon; and broadening the agricultural production base, through, for example, promoting small livestock and horticulture;

(d) Risk management and insurance, including livestock and crop insurance and weather-based index insurance;

(e) Agricultural research and technology development, including on participatory crop and livestock breeding; pest-, disease- and drought- and/or heat-tolerant crops; fish fingerlings; research into new farming systems; research into crop, livestock, soil, water and pest/disease/weed control issues; research as applied to area-specific varieties and practices;

(f) Agricultural advisory service and information systems, including strong extension services; a participatory extension approach (including farmer-to-farmer training and farmer field schools); dissemination of climate-resilient varieties, technologies and practices; dissemination of seasonal climate forecasts; market and climate information systems; and ICT;

(g) Agricultural market development, including cooperatives and groups for farm inputs and outputs; cooperative storage at farm level; infrastructure and market development; support for market information systems, including the use of ICT; and promoting agroprocessing and value-addition and post-harvest technologies;

(h) Social protection and disaster risk management, including strengthening local and farmers' institutions and organizations; promoting microfinance schemes, including ensuring functioning financial markets and institutions; increasing the focus on risk sharing and risk reduction across the entire value chain; developing/enhancing climate information systems and early warning mechanisms; and developing/enhancing disaster risk management.

220. Secondly, information was communicated on NAMAs in the following areas of governance:

(a) Reviewing existing detrimental policies and regulations that worsen climate change impacts;

(b) Mainstreaming win-win adaptation and mitigation strategies and actions through appropriate incentives, including through existing national and regional frameworks (at whatever stage of implementation) and regional agricultural development plans;

(c) Developing policies to ameliorate the adverse impacts of livestock production and rearing;

(d) Investigating financial risk management;

(e) Strengthening existing agricultural institutions and developing new ones;

(f) Investing in the good governance of farmer organizations.

221. Thirdly, information was communicated on NAMAs relating to early readiness actions for scaling up best practices with the following elements:

(a) National/sectoral strategy and action plans that enhance agricultural adaptation and the potential for mitigation;

(b) Increased adaptation of crops, livestock and aquacultured organisms to climate stress;

(c) Enhanced access to and utilization of technologies that enhance efficiency and productivity;

(d) Increased use of a menu of resource-conserving technologies in agronomic practices, nutrient management, water management conservation, agriculture and crop residue management, agroforestry, restoration and rehabilitation, livestock management, fisheries and aquaculture, and efficient energy management;

(e) Access to credit and microfinance;

(f) Improved risk sharing, including crop and livestock insurance and weather-based index insurance;

(g) Agricultural advisory services and information systems, including the use of mobile telephones.

222. Regarding implementation and impact assessment, the Party communicated the following actions, including to: establish a specialized national institution responsible for MRV; develop a national MRV system; develop methodologies for the quantification of emissions, harmonization, quality assurance and standardization; and develop tools to monitor the impacts of adaptation interventions.

223. Swaziland mentioned that the total budget of the NAMA is USD 4.4 million and that support from the international community is needed. In addition, the country will require support for the identification of the technological needs of the country and the relevant research and development, review and implementation. Finally, capacity-building will be required for: developing, implementing and monitoring the agricultural NAMA; the provision and use of tools to enable accurate and full GHG emission accounting; the optimum use by farmers, farmer organizations and other agricultural stakeholders of available resources and technologies; and agricultural extension, research and development in the country.

Tajikistan

224. Tajikistan communicated the following NAMAs:

(a) The preparation of a GHG inventory;

(b) The improvement of energy-efficient technologies in buildings and constructions;

(c) Support for mitigation measures;

(d) Projects on capacity-building and technology transfer;

(e) The development of low-carbon growth through the introduction of renewable energy sources.

Thailand

225. Thailand will endeavour, on a voluntary basis, to reduce its greenhouse gas emissions by 7–20 per cent below the 'business as usual' scenario in the energy and transport sectors by 2020, subject to the level of international support received in the form of technology development and transfer, finance and capacity-building for the preparation and implementation of NAMAs. These NAMAs will include the following measures:

(a) Development of renewable and alternative energy sources;

(b) Energy efficiency improvements in industry, buildings, transport and power generation;

(c) Biofuels for transport;

(d) An environmentally sustainable transport system.

226. The communicated information on NAMAs, as announced, does not have a legally binding character and will be implemented in accordance with the principles and provisions of the Convention, in particular its Article 4, paragraph 7, and taking into account national circumstances.

The former Yugoslav Republic of Macedonia

227. The former Yugoslav Republic of Macedonia communicated the following NAMAs, derived from its second national communication:

(a) GHG emission reductions in the electric power sector:

(i) The harmonization and implementation of European Union legislation on energy and climate:

- Energy and climate package;
- The liberalization of energy markets (electricity and gas);

(ii) Ensuring stability in the energy supply with investment activities for building new large-scale hydroelectric power plants:

- Boskov Most hydroelectric power plant;
- Galiste hydroelectric power plant;
- Cebren hydroelectric power plant;

(iii) Ensuring stability in the energy supply with investment activities for building new thermal gas power plants:

- Skopje CHP (230 MW);
- CC GAS (200–300 MW);

(iv) Increasing the share of renewable energy in the energy sector:

- Small-scale hydroelectric power plants;

- Wind power plants;
- Biomass electricity and PV panels;

(v) The improvement of energy efficiency:

- Building plants for the production of CHP;
- Measures for reducing losses in the transmission and distribution of electricity;
- Measures taken by electricity consumers (e.g. the introduction of more energy-efficient lamps, electric appliances);

(b) GHG emission reductions in the industrial energy transformation and heating sector:

(i) Reducing the use of carbon-intensive fuels:

- The replacement of coal with liquid or gaseous fuels; the replacement of liquid fuels with gaseous fuels;

(ii) The improvement of energy efficiency and energy savings:

- The improvement of the energy efficiency of boiler plants with permanent maintenance;
- The replacement of old equipment in boiler rooms with regular revitalization work;
- The installation of measurement–regulation equipment and automatic control systems;
- Better insulation, maintaining clean heat-exchanging surfaces;
- The utilization of heat content in flue gases;
- The reduction of losses in fluid transportation systems;
- The heat insulation of pipelines for the transport of water, steam, fuels, etc.;
- The reduction of specific energy consumption in industry through the introduction of up-to-date technologies and processes;
- The improvement of the performance of the thermal cycle;
- The improvement of standards for the construction of buildings, better insulation and the use of high-quality materials;

(iii) Increasing the contribution of renewable energy sources in the country's energy balance:

- The utilization of waste biomass as an energy source and as a raw material for the production of briquettes and pellets;
- The installation of dozens of boiler units using waste biomass in the agro-industry complex, the industry sector and households;
- The rehabilitation, revitalization and expansion of the Geoterma-Kochani geothermal system;
- The revitalization of other systems using geothermal energy;
- The introduction of solar energy systems for heating and hot water supply (in hotels, hospitals, schools, public buildings, health resorts, etc.);

(iv) Awareness-raising of the final consumers:

- The reduction of energy consumption in households through energy-saving measures;
- The reduction of electricity use for heating;
- The introduction of measurement equipment and charging in accordance with consumption;

(c) GHG emission reductions in the transport sector:

(i) The improvement of the overall efficiency of the transport sector and the energy efficiency of vehicles:

- The revitalization, extension and better maintenance of the road and railway infrastructure;
- Extending the electrification of the railway network;
- The modernization of the vehicle fleet;
- Encouraging the wider use of alternative fuels and other power systems (LPG, CNG, biodiesel, hybrid vehicles, etc.);

(ii) The improvement of public urban and intercity transport systems:

- The improvement of the planning, organization and control of traffic;
- Measures for the regulation of traffic in central urban areas;
- The modernization of transport equipment for the public;
- The synchronization of road signalization in towns;
- The introduction of automated pay toll charging;
- The introduction of electric modes of transport (i.e. tramways);
- Railway transport – the electrification of the railway network;

(iii) The harmonization of the national legislation regarding the transport sector, in accordance with European Union directives:

- Energy and climate package (biofuels);
- The regulation of fuel quality in accordance with the European Union requirements;

(d) GHG emission reductions in the waste sector:

(i) GHG emission reductions at existing landfills, including the installation of CH_4 recovery and flaring systems at some selected landfills;

(ii) The improvement of possibilities for efficient CH_4 recovery:

- The construction of regional solid waste disposal sites;

(iii) The reduction of nitrous oxide (N_2O) emissions:

- The implementation of legal measures for the restriction of economic activities, including the uncontrolled burning of waste;
- Raising public awareness with regard to restrictions on the uncontrolled burning of waste;

(iv) The reduction of CH_4 emissions from wastewater:

- The expansion of the wastewater treatment plant network;

(e) GHG emission reductions in the agriculture and forestry sectors:

(i) Enabling favourable preconditions for GHG emission reductions (laws, by-laws, institutional measures, support measures):

- The transposition and implementation of the European Union Common Agricultural Policy legislation;
- The completion of institutional and legal reforms in the irrigation sector;
- Increasing institutional and individual capacities for the application of available European Union funds;
- The development of a system for the application of good agricultural practices;
- Financial support in order to motivate farmers to use mitigation technologies;

(ii) The introduction/development of GHG mitigation technologies in agriculture:

- The installation of CH4 recovery and flaring systems at selected farms;
- A research support programme for the development of new mitigation technologies and the transfer of existing ones;
- A programme for the introduction of practices that harness the potential of the agriculture sector for the use of renewable energy and carbon sequestration;

(f) Programmatic CDM projects:

(i) Strengthening the national and local capacities for carbon financing:

- Training with regard to the CDM potential in the agriculture sector;
- Training with regard to the preparation of CDM documentation;

(ii) Education (of experts/farmers/decision makers) with regard to the application of mitigation measures/technologies in the agriculture sector:

- Upgrading the current curricula and syllabus with climate change mitigation issues;
- Training farmers with regard to the adoption of new technologies;
- Familiarizing the public and institutions with the problems of climate change mitigation;

(iii) The implementation of the national strategic documents in the forestry sector:

- Forestation and reforestation;
- Prevention measures against fires;
- The prevention of illegal felling.

Togo

228. Togo communicated the following NAMAs to increase forest cover from 7 per cent in 2005 to 30 per cent in 2050 in relation to the national area through reforestation and the improvement of the availability of forest resources.

(a) Energy efficiency in urban and rural areas:

- The reduction of energy consumption (public transport, the use of gas as a substitute for heating fuel, etc.);
- The reduction of GHGs;
- The replacement of light bulbs that consume more energy by those that consume less energy;

(b) The conservation of traditional energies:

- The rational use of traditional energy sources (biomass);
- The use of improved stoves;
- The improvement of yields from the carbonization of wood in charcoal making;

(c) The promotion of the use of renewable energies (solar, wind, biogas, biofuel):

- Research on the use of solar and wind power;
- Research on the use of biogas and biofuel energies.

Tunisia

229. Tunisia communicated the following NAMAs:

(a) Actions for the development of renewable energies, including the energy valorization of solid and liquid wastes:

(i) Electricity generation from concentrated solar power;

(ii) Electricity generation from solar PV;

(iii) Electricity generation in buildings from solar PV;

(iv) The intensification of solar water heating;

(v) Energy production from wind energy;

(vi) The energy valorization of solid and liquid wastes (electricity generation and biofuels);

(vii) The energy valorization of the CH_4 emitted from controlled landfills and from wastewater treatment plants;

(viii) Energy production from biomass;

(ix) The valorization of solar and wind energies for water desalinization and pumping;

(b) Actions for the development of alternative energies:

(i) The development of natural gas use in the industrial, tertiary and residential sectors;

(ii) The development of other alternative energies producing low GHG emissions;

(iii) The promotion of the use of clean energies, especially compressed natural gas in the transport sector;

(c) Actions for energy efficiency and the sound use of energy:

(i) The promotion of collective transport (metro, train and bus in dedicated lanes) in cities;

(ii) The development of urban transport plans in the main cities;

(iii) The creation of logistical areas and specialized economic poles to bring together transport needs;

(iv) The development of multimodal transport and the transport of freight via rail transport;

(v) The consolidation of the role of rail transport in economic activity;

(vi) The construction of buildings and houses that meet energy efficiency requirements;

(vii) The construction of solar energy houses;

(viii) The improvement of energy efficiency in buildings;

(ix) The certification of household electrical appliances;

(x) The diffusion and development of the use of energy-saving light bulbs;

(xi) The development of cogeneration and tri-generation;

(xii) The development of energy efficiency programme contracts in the industrial, transport and tertiary sectors;

(xiii) The promotion of the diffusion of tension switchers and other energy-saving appliances in the field of public lighting;

(xiv) Developing the establishment of engine diagnostic plants in the transport sector;

(xv) The recovery and utilization of associated petroleum gas;

(d) Actions in the industrial processes sector:

(i) The reinforcement of the national programme for the environmental upgrading of industrial companies;

(ii) The reduction of the GHG emissions resulting from industrial processes, including N_2O emissions in the phosphate industry;

(e) Actions in the afforestation/reforestation and agriculture sectors, and the reduction of emissions resulting from deforestation and land degradation:

(i) Increasing the forest cover rate from 12.8 per cent in 2009 to 16 per cent in 2020 by ensuring 250,000 ha of forest and pastoral tree planting at a rate of 27,000 ha annually, starting from 2012;

(ii) Increasing the percentage of natural reserves from the total forest area from 17 per cent in 2009 to 20 per cent in 2014, by creating and rehabilitating 20 new natural reserves in forest areas;

(iii) Increasing the areas devoted to biological farming, to reach 500,000 ha in 2014;

(iv) Upgrading farms according to international standards, and promoting the use of new water-saving techniques in irrigated perimeters to cover at least 200,000 ha, compared with 120,000 ha in 2009;

(v) Reinforcing the programmes for brackish water desalinization and the reuse of treated wastewater, including in the framework of the implementation of the national strategy on water resource mobilization by 2050, using the best energy-saving and water-saving technologies to support agriculture, the fight against desertification, land protection, and forest and pastoral tree planting.

230. Tunisia also stated that its NAMAs are voluntary in nature and consistent with its sustainable development programme, and that they would be implemented in accordance with the provisions of Article 4, paragraphs 1 and 7, of the Convention. The Party also underlined the importance of the need for international support in terms of finance, technology transfer and capacity-building in order to implement its proposed NAMAs. Further, the Party added that the use of the Kyoto Protocol CDM is not excluded.